STC

November 2023
Volume 70 Number 4

Technical COMMUNICATION

Journal of the Society for Technical Communication

Critical Digital Interface Analysis & Social Justice

Technical COMMUNICATION

Journal of the Society for Technical Communication

Technical Communication (ISSN 0049-3155, permit 0763-740) is published quarterly by the Society for Technical Communication, a nonprofit educational organization, 3251 Old Lee Highway, Suite 406, Fairfax, VA 22030, USA.

Periodicals postage paid at Fairfax, VA 22030, USA, and at additional mailing offices. Canada Post Agreement Number 40045946. Send change of address information and blocks of undeliverable copies to P.O. 1051, Fort Erie, ON 12A 6C7, Canada.

POSTMASTER: Send address changes to Technical Communication, 3251 Old Lee Highway, Suite 406, Fairfax, VA 22030, USA. Printed in the USA.

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VOLUME 70, NUMBER 4
November 2023
ISSN 0049-3155

Technical COMMUNICATION

NOVEMBER 2023

Journal of the Society for Technical Communication

ARTICLES

DEPARTMENTS

ONLINE ONLY

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INSTRUCTIONS FOR AUTHORS

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Technical Communication publishes articles in five categories:

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Jennifer Sano-Franchini, Guest Editor, and Kaytely Carpenter, Editorial Contributor

Critical Digital Interface Analysis and Social Justice

This special issue of *Technical Communication* focuses on the critical analysis of digital interfaces and its implications for social justice in user experience (UX) design. In a time when new applications are developed and updated on a daily basis and the technological sector expands further and further into everyday life, it is increasingly important that technical communicators cultivate the ability to analyze the UX designs of digital technologies with social justice in mind. Examples of social justice issues in digital interfaces abound in 2023. For instance, since Elon Musk's acquisition of Twitter (now X), the platform's interface has undergone several seemingly small changes that have significant social consequences. Most recently, his announcement that there will no longer be a "block function" on the site (Spangler, 2023) has raised safety concerns for already-marginalized people; for one, the Auschwitz Memorial Museum account expressed their concern that this change will allow antisemitic comments to appear on their educational posts and both enable and normalize hate speech (Auschwitz Memorial, 2023). In addition, many different platforms have been influenced by Tik Tok's short form video format and highly tailored algorithm that both centers and isolates users while amplifying content that too often further oppresses marginalized app users (Noble, 2018; Fernandes, 2022). The social justice implications of digital interfaces, of course, expand beyond social media into other parts of day-to-day life, including medical technologies. As an example, the increasingly prevalent use of iPads and tablets in doctors' offices (Kiosk Group) as well as telehealth services can exacerbate existing issues related to accessibility and the digital divide, particularly for patients who may not be comfortable navigating such technologies, given studies showing that only 44% of people over 65 years of age own a tablet (Faverio, 2022; Eisenberg, 2023). In the domain of so-called artificial intelligence (AI), there have been concerns about how generative large language models (LLMs), including but not limited to ChatGPT, further online misinformation through interfaces that often present inaccurate information (Roush, 2023) through an authoritative yet accessible display with its welcoming and conversational chat-based interface.

Indeed, we suggest—and the articles in this special issue show—that critical approaches for the analysis of digital interfaces is an essential skill for our current times, especially for technical communicators who write about, work with, and participate in or support the design of digital technologies. Moreover, critical digital interface analysis is distinct from other approaches to studying UX and digital platforms more generally in that it considers how the design of digital interfaces—which all who have access to that technology can directly and immediately access—affects how technology users interact with the platform, the organizations that host them, one another, and the ideas, objects, and spaces that make up the world around us. This special issue seeks to unpack the relationship between the design of digital interfaces and social justice, considering, for instance, how digital interfaces mediate and facilitate the material distribution of wealth and other resources, influence the material flows of political power, validate particular ways of knowing over others, support minoritized communities, and otherwise affect the way we understand and relate with one another and our respective environments.

Critical Digital Interface Analysis and Social Justice

Digital Interface Analysis and Social Justice

The field of Technical and Professional Communication (TPC) has had a long tradition of scholars and practitioners who have studied the ideological and rhetorical function of technological interfaces. As Haas' (2012) "Race, Rhetoric, and Technology: A Case Study of Decolonial Technical Communication Theory, Methodology, and Pedagogy" explained, "just as the rhetoric we compose can never be objective, neither can the technologies we design" (p. 288). Published analyses of digital interfaces in TPC include but are not limited to Selfe and Selfe's (1994) foundational "The Politics of the Interface," which analyzed capitalism, class privilege, and Whiteness in computer desktop interfaces; Banks' (2005) *Race, Rhetoric, and Technology*, which discussed African American design traditions and the need to contextualize how we understand "professional" design norms; Moses and Katz's (2006) "The Invisible Ideology of Email," on how the purposive-rational ideology embedded within email interfaces affects how people work and live more generally; Zdenek's (2007) "'Just Roll Your Mouse Over Me,'" which provided a gender-based critique of virtual women for online customer service; Knight et al.'s (2009) "About Face," which analyzed the institutional websites of 150 TPC programs in terms of how they signify "particular values, beliefs, and practices" that represent the program's identity as well as the values of the field more broadly (p. 192); Sidler and Jones' (2009) "Genetics Interfaces," which analyzed two civic action groups related to genetics research to demonstrate the need to combine scientific knowledge with cultural and emotional rhetorics for public science writing audiences; and Gu's (2016) "East Meets West," which used a comparative approach, analyzing Chinese and U.S. interface designs, to show the importance of considering culture and context for understanding the function and rationale of design choices. These works demonstrate how capitalist, African American, feminist, cultural, and comparative rhetorical lenses—to list a few examples—may be applied for the critique of user interface designs.

In addition to such analyses, Brock (2018), Sackey (Mckoy, et al., 2019), Funk and Guthadjaka (2020), and Sano-Franchini (2018) have further explicitly described methods and methodological considerations for critical digital interface analysis. Brock's (2018) "Critical Technocultural Discourse Analysis" brings together critical race, feminism, queer theory, and other critical approaches to describe a multimodal analytic technique that enables researchers "to unpack semiotic and material connections between form, function, belief, and meaning of information and communication technologies" (p. 1012) as informed by his research on Black Twitter as an exemplar. Furthering the focus on critical race approaches, Sackey argued for the need "to think of user experience design through a race-conscious lens, particularly an Afrocentric lens" as a way of demonstrating how approaches to design "through an apparent race-neutral lens…in fact…privileges whiteness." Likewise, Funk and Guthadjaka's (2020) "Indigenous Authorship on Open and Digital Platforms" speaks to how interfaces "structured according to western epistemological assumptions" marginalize Indigenous technology users and Indigenous frames of knowledge. Instead, they argue for the need to ensure that "knowledge management decisions and subsequent platform designs centre and privilege Indigenous knowledge holders and authority" (p. 9). In addition, Sano-Franchini's (2018) "Designing Outrage, Programming Discord" articulated a method that she referred to as "critical interface analysis," a humanistic method that for unpacking the political, cultural, and ideological implications of digital interfaces as it "blends theory, critique, and reflection on embodied experience in a recursive fashion" and that asks researchers to consider "the organizing logics of the interface," as well as the affordances, limitations, emotional registers, and presuppositions of the interface (p. 391).

More recently, scholars have continued to take up interface analyses through critical, feminist, and race-conscious lenses focusing on a variety of platforms and technologies. For example, Jones and Williams' (2018) research regarding literacy tests and voter registration applications that were designed to keep Black people from voting highlights how interface design has long been a

mode of disenfranchisement and oppression to the benefit of those in power, even before the widespread ubiquity of digital technologies. In addition, this work shows how critical digital interface analysis can be applied to critique interfaces of earlier technologies, including technological infrastructures that are designed to exclude. Homer (2020) analyzed the #WeAreMaunaKea hashtag, demonstrating how Native Hawaiian sovereignty claims intervene in oppressive algorithmic procedures; Jones' (2021) analyzed how Twitter's "What's Happening" and Instagram's Live Stream interfaces mediate political content for users; Green (2021) drew on intersectional queer theories of unruliness to demonstrate how study participants "resisted Grindr's interface, which encourages users to disclose their HIV status," thus disrupting the risk rhetorics of the platform; and Richter (2021) analyzed the rhetoric of "rules" documents on Reddit. Together, these works demonstrate how the critical analysis of digital interfaces can provide a wide range of insights for understanding the rhetorical affordances of constantly-changing technologies, and perhaps even more importantly, the weighty implications of interface design choices, especially for already structurally marginalized communities.

In addition to these concerns within TPC, broader cross-disciplinary, industry, and public conversations regarding digital racism as well as other social justice concerns, as facilitated by digital technologies, have emerged, as UX designers have discussed the role of UX and interface design in upholding racism on popular platforms like Airbnb, NextDoor, and Google, including both its search and Arts and Culture applications. Such conversations have been furthered by the important work of organizations and industry-based initiatives that have advanced antiracist and justice-oriented approaches to UX design like HmntyCntrd, founded by Vivianne Castillo, the State of Black Design, and the Design Justice Network. Attention to these issues has also increased with the publication of Safiya Noble's (2018) landmark *Algorithms of Oppression* and Ruha Benjamin's (2019) *Race After Technology*, amongst other works. With all of this being said, critical digital interface analysis has significant practical relevance, and it is a method that can clearly demonstrate what humanities-trained professionals who are attentive to issues of social justice can uniquely contribute to computer engineering, design, and other technology development teams, as they are able to offer and articulate more granular understandings of how seemingly minute design decisions can contribute to inequality, inaccessibility, misinformation, and political polarization.

The Contents of this Special Issue

The articles included in this special issue apply critical digital interface analysis to a range of technologies, from a nonprofit organizational website to mobile ridesharing platforms to social media reporting interfaces to a stock trading application. Each of the articles move beyond usability, functionality, and apolitical approaches to UX to consider the ideological, cultural, and political implications of interface design. In doing so, they center specific features, interactive elements, texts, and iconography while taking up broader issues of transnationalism, capitalism, colonial histories, sexism, housing insecurity, and community engagement. Further, the articles draw interdisciplinary connections across areas of inquiry including technical communication, UX design, comparative rhetoric, homelessness studies, and platform rhetorics. As a result, they demonstrate the expansive possibilities and offer useful ways for thinking through the capacious affordances of critical digital interface analysis for analysis, critique, design, revision, and community engagement in technical communication.

First, "Making Solutions Visible: Facilitating Housing Equality through Interface Design" by Elena Kalodner-Martin and Kendall Leon is a retrospective analysis that discusses their experiences as content strategists working with a homelessness advocacy organization to redesign the organization's website interface to better reflect—as well as encourage a shift in—the organization's priorities. Drawing on interview and survey data as well as Kalodner-Martin and Leon's reflections as scholar-practitioners

who worked on the content strategy with Lex End Homelessness, this article walks us through the process by which the authors worked to update the interface to better suit the campaign's new goals and priorities and ready them for their next steps. In doing so, this paper offers a case of how critical interface analysis can be applied recursively during the design and revision process to advance ideological concerns and support social justice efforts—in this case related to homelessness. Moreover, it does so by drawing attention to the how, the when, and the culturally and contextually specific affective resonances of digital interfaces, while also further demonstrating the value of personal experience and reflection as an important component of UX research. As a contribution to the literature on critical interface analysis, we were struck by how this piece—like many of the other articles in this special issue—highlight how user experience and interface researchers move across form and content as both shape how people experience the designs of digital interfaces.

Next, "Driving Innovation: Counterhistories, Critical Inquiries, and Cultural Interfaces in Mobile Ridesharing Apps" by Laura L. Allen and Gavin P. Johnson examines the histories and interfaces of ridesharing applications using Brock's (2018) critical technocultural discourse analysis (CTDA) paired with Haas' digital cultural rhetorics (DCR) framework. Contrasting popular "innovative interfaces" such as Uber and Lyft with community-based user experience (CBX) applications that center access and the experiences of marginalized communities such as Safr, Moovn, HERide, and Go Girl Ride, Allen and Johnson argue that innovation, an oft-praised ideal, is actually a Western ideology that prioritizes "domineering change and capitalistic gain" at the expense of the communities who use and are impacted by those technologies as well as the cultures from which the technology emerged. By showing how Lyft has origins in South African traditions of ridesharing, the authors demonstrate the limits of rhetorical commonplaces about technologies, and the need to consider how critical counterhistories might inform UX design.

"Reporting Online Aggression: A Comparative Critical Interface Analysis" by Chen Chen and Xiaobo Wang walks readers through a transnational comparative analysis of the reporting interfaces of Twitter and Sina Weibo. The authors offer cases where they each, as users of these apps, reported two kinds of online aggression: (1) direct (personal) aggression, and (2) value-driven misinformation. By examining the process for reporting online aggression on these platforms, this piece demonstrates how reporting policies and processes on Sina Weibo and Twitter support "dominant political and nationalistic ideologies" of the respective country in which each site is based. Powerfully, they note how "when mainstream U.S. media and politicians tend to discuss China in a monolithic and othering way, it is also hard to imagine Twitter adopting sufficiently ethical policy when assessing the nuances of Chinese content." Ultimately, the authors call for a design process that prioritizes multiple cultures and voices instead of websites serving monocultural and nationalistic agendas—for instance, by including multiple languages in reporting interfaces, creating more friction in the reporting process, and giving app users the ability to challenge the options made available to them. As an important contribution to the scholarship on critical interface analysis, Chen and Wang offer a revised method of critical interface analysis (2018) that better accounts for transnational subjectivities, while also illustrating how digital interfaces serve as a mechanism of content moderation.

Concentrating its focus to a single application, "From the Poor to the Rich: Predatory Inclusion and the Robinhood App," by Andrew Ridgeway and Noah Wason, examines the interface design of the popular stock trading application, Robinhood. The authors argue that Robinhood engages in "predatory inclusion" and high-risk design, even as it purports to "democratize" the stock market. That is, while Robinhood makes stock trading more accessible for those who have been excluded from it, the platform does not actually give these groups the tools they need to make sound investment choices. For instance, Ridgeway and Wason show how Robinhood's interface is designed to mimic the dynamics and rhetorics of a casino, as it

encourages impulsivity through "a manufactured sense of urgency" resulting in frequent trading even as that has been proven to be an ineffective approach to investing. They additionally show how embedded within Robinhood's interface is a gamified approach to investment; its user interface "is designed to be as simple, engaging, immersive, and habit-forming as possible"—generally to the detriment of the consumer investors using the app. As a result, this article shows how, even as a company may use the rhetoric of social justice to market its product, we must look closely at how embedded within interfaces we may find "rhetorically sophisticated techniques that occupy a gray zone between persuasion and compulsion" for purposes of exploitation. For UX designers, Ridgeway and Wason highlight the need "to attend to discrepancies between marketing materials and UX design."

Finally, this special issue closes with a Review of Research by Ann Shivers-McNair. "Critical Interface Analysis as a Heuristic for Justice-Focused, Community-Engaged Design Research" looks toward other potential uses for critical interface analysis, beyond analysis and critique. More specifically, Shivers-McNair reviews approaches to critical interface analysis by Brock (2018) and Sano-Franchini (2018) to consider how critical interface analysis might be useful to social justice oriented community-based design researchers for language setting, research planning, participatory analysis, and research evaluation. In doing so, this piece connects back to Kalodner-Martin and Leon's paper in this special issue in interesting ways, as it makes critical interface analysis' productive possibilities for community-engagement contexts explicit and readily applicable. In doing so, it further expands the scope of uses for critical interface analysis as well as the contexts in which it might be applied.

Taken together, these articles reflect the broad possibilities of critical interface analysis as a method for furthering social justice efforts—including efforts related to homelessness, financial access, online harassment, and safety for marginalized technology users. They additionally encourage thoughtful research and technology design processes that center marginalized users while investigating how design can be re-imagined to be both more accessible and equitable. Additionally, they move beyond Euro-Western contexts toward comparative frameworks that include, for example, a Chinese microblogging interface and South African ridesharing technology, highlighting how transnational histories and movements affect the way localized technologies are conceptualized. As a set, the articles consider how interfaces affect how technology users move, seek redress for online aggression, and participate in the stock market and manage financial capital, as well as how nonprofit organizations communicate and advance their mission. They also demonstrate the broad uses of critical interface analysis for moving technical communicators and design researchers from understanding and interpretation to action—as a method for critique, design, revision, and community engagement, as well as for adapting to changing contexts and for being responsive to ideological shifts. In other words, the articles are generative as they open up possibilities for designers to imagine more effective and inclusive reporting practices and safer online environments, digital inclusion that is genuine and not predatory, and digital rhetorics that are globally situated with colonial histories in mind.

Our sincere thanks to the fifteen peer reviewers, whose generative feedback helped shape this special issue. We are also appreciative of the numerous scholars who submitted proposals for this special issue. We would have loved to include more voices and perspectives, as the range of important topics reflected in the proposal submissions—including but not limited to those of sonic-haptic interfaces, disability and accessibility, immigration processes, and medical interfaces—affirm the need for more spaces for furthering conversations about critical digital interface analysis. Finally, we thank Miriam Williams, Editor-in-Chief of *Technical Communication*, for her guidance throughout the development of this special issue, as well as the members of the *Technical Communication* Editorial Advisory Board for supporting the publication of this special issue.

Critical Digital Interface Analysis and Social Justice

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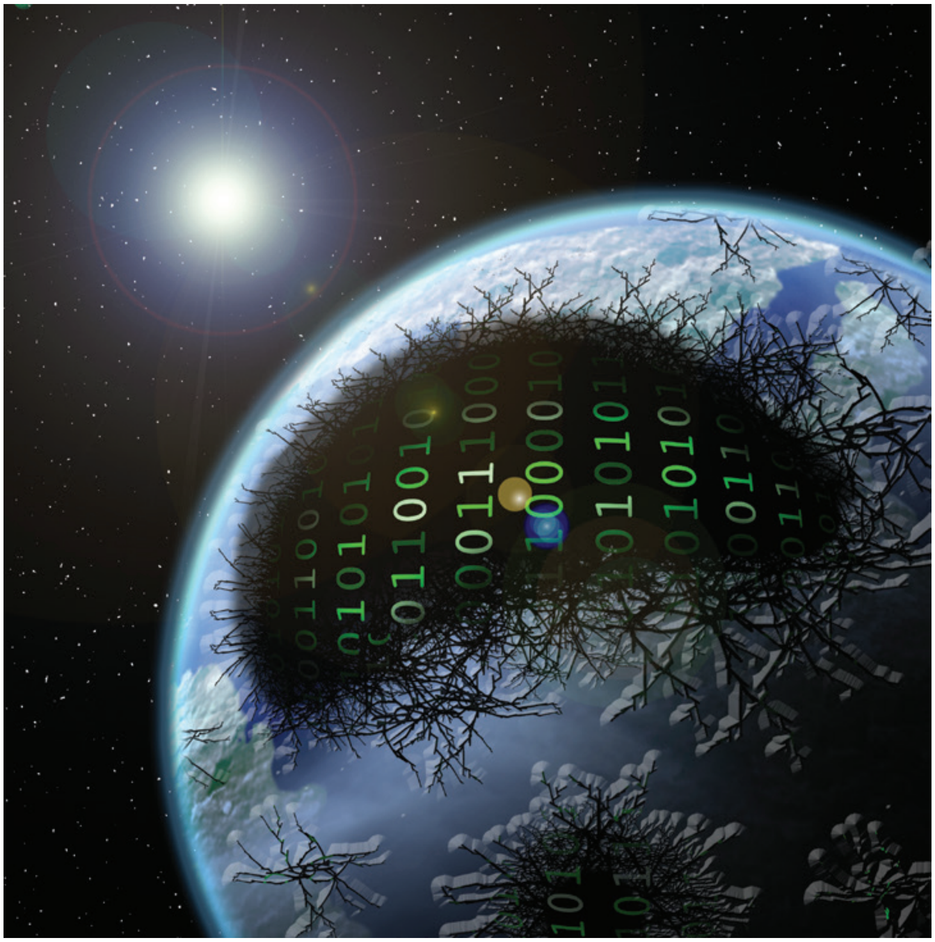
Kaytely Carpenter is a graduate student at West Virginia University pursuing her MA in Professional Writing and Editing. Her research interests focus on social justice and its implications in user experience, prison studies, and rural health and medical humanities. She currently teaches first-year writing composition at WVU and also served as a teaching assistant for a course taught in SCI Greene as part of the higher education in prison initiative. In 2023, she served as the graduate assistant for the Hills and Hollers Conference for non-tenure track faculty. She is available at kmc0007@mix.wvu.edu.

On the Cover



ARTIST'S NOTES

I decided to tackle the "Digital Interface Analysis and Social Justice" prompt for the final project in my technical writing class. Rather than keep trying to sketch out ideas, I started as if I was writing a response to the prompt "Digital Interface Analysis and Social Justice." In a few minutes, I wrote, "In a world quickly being taken over by all forms of digitalization, the need to harness this power for social justice becomes ever more pertinent." Thus, I created the image of a globe with vines coming out of it from an inward digital landscape.

ABOUT THE ARTIST

Sarah King Middleton is a graduate student at Eastern Kentucky University studying in the English and Writing Professions program. She is also an English and Theatre teacher at Estill County High School in Irvine, KY. She loves giving students the opportunity to step out of their comfort zone and take creative risks. She can be reached at sarahking_king98@mymail.eku.edu.

Making Solutions Visible: Facilitating Housing Equality through Interface Design

doi.org/10.55177/tc585670

By Elena Kalodner-Martin and Kendall Leon

ABSTRACT

Purpose: Drawing from research on the role of digital interfaces in sociopolitical change (Selfe & Selfe, 1994; Sano-Franchini, 2018; Hallinan et al., 2022), this article identifies how, in the wake of an ongoing public health crisis, one homelessness advocacy organization leveraged their website to reflect and facilitate a shift in priorities and practices. This article addresses two questions:

- In what ways are organizational values emergent, mediated, and reimagined through interface design?
- How can practitioners enact ethical design decisions in their work to 1) make solutions-oriented impact visible and 2) help users achieve action and social-justice oriented goals?

Method: To answer these questions, we draw from an extended case study from Lex End Homelessness (LEH), a homelessness prevention and intervention initiative based out of Lexington, KY, USA. Since its launch, LEH has moved from dispelling harmful myths about homelessness to ideological conversations about homelessness causes and potential solutions (Kalodner-Martin, 2022). As a result, the website, given its public-facing nature, is being rebuilt to reflect LEH's transition.

Results: Results demonstrate that the LEH's website interface reflected changes in the organizational priorities, the ideological context, and local needs, specifically regarding supporting understanding, emphasizing, and acting to end homelessness.

Conclusion: As an ongoing project, we conclude our article outlining next steps in the interface redesign.

Keywords: Interface Design; Homelessness; Communications Campaigns

Practitioner's Takeaway:

- Case study of an interface designed to facilitate social impact.
- Process for integrating ideological concerns into interface design.

Technical communication (TC) research has long examined how digital interfaces are implicated in fostering (or foreclosing) social justice. Given TC's relationships to fields of study like user experience (UX), much of this research examines how platforms are structured and, as a result, what responses are made possible by and for a wide range of technology users. However, as part of the social justice turn, TC is also increasingly examining how "injustice is not just a problem in technical communication but also one we can solve *with* technical communication" (Haas & Eble, 2019, p. 8, emphasis in original). Achieving this goal regarding interface design requires that technical communicators attune themselves to the relationship between ideologies and tools and technologies. Although research has examined how users take up digital technologies to respond to shifts in structures of power, more work is needed to understand how digital interfaces are implicated in moments of ideological transition and their potential to redress injustice on and offline.

In what follows, we offer a retrospective analysis that draws from interview and survey data, as well as website analytics to demonstrate how Lex End Homelessness (LEH), a homelessness prevention and intervention campaign based out of Lexington, KY, leveraged their website to reflect and facilitate a shift in priorities and practices in the wake of the COVID-19 pandemic. LEH is the outcome of a collaborative effort between Untold Content (an innovation storytelling agency), the municipal Office of Homelessness Prevention and Intervention (OHPI) in Lexington, and dozens of human service providers that make up the Lexington-Fayette County Continuum of Care (CoC). In our capacity as both academics and as Content Directors with Untold Content working on the LEH campaign since its launch, we offer a theoretically grounded, inside perspective on the design choices made to LEH's website interface to reflect its campaign goals. Our specific research questions include:

- In what ways are organizational values emergent, mediated, and reimagined through interface design?
- How can practitioners enact design decisions in their work to a) make solutions-oriented impact visible, and b) help users achieve action and social-justice oriented goals?

To begin, we introduce the LEH movement and the objectives for its two campaign phases. We then provide a brief overview of relevant literature and move to discuss our analytic framework. As an applied and ongoing research effort, we conclude our article outlining next steps in the interface redesign and offer takeaways for technical communication scholars and practitioners.

BACKGROUND: LEX END HOMELESSNESS CAMPAIGN

Launched in June 2021, Lex End Homelessness was created to spread awareness about homelessness, garner community support for homelessness intervention and prevention, and unify efforts to ensure that no individual, regardless of background or housing history, faces the challenges and traumas of homelessness. At its launch, the goals for the LEH movement were to educate and reduce stereotypes, redefine homelessness, and increase the community's awareness of the way homelessness connects with affordable housing. LEH takes a multipronged approach to addressing local conditions of homelessness by collecting information and quantitative data from CoC partners about impact and use of services, performing strategic needs and gap analysis of resources, funding identified programs, and gathering stories from people with first-hand accounts of being unhoused. Though not a government campaign, the Lexington-Fayette Urban County Government's (LFUCG) OHPI coordinates activities and planning for providers, stakeholders, and affected citizens to ensure an efficient and effective system offering everyone access to shelter, food, employment, housing, and other basic needs and opportunities.

Given Untold Content's background in innovation storytelling, or the process of using narratives to communicate value and impact to target audiences, in 2020 LFUCG selected our proposal to coordinate a communications campaign to launch the LEH movement in 2021. As Content Directors for Untold Content, we worked alongside other team members, OHPI, and CoC partners to plan, compose, and share content about the LEH mission with the larger Lexington community. In Phase 1 (2020–2021), LFUCG tasked our team with branding LEH as a community driven movement built from a partnership between government agencies, homelessness serving organizations, faith groups, businesses, and community members.

The objectives of the Phase 1 communications campaign were to engage effectively with LEH stakeholders to ensure they understood 1) LEH's values, mission, and vision; 2) the solutions to ending homelessness; and 3) the success of the CoC's coordinated efforts. To facilitate these objectives, the Untold team designed a user interface (the LEH website), a public-facing data dashboard with point in time homelessness data, and informative content pieces to be shared across social media and other channels. Phase 1 occurred during the height of the COVID-19 pandemic response. As a result, the communications campaign focused on strategies that could be delivered virtually; moreover, given the crisis of the moment, there was a need to highlight services available. The Phase 1 contract ended in December 2021. In May 2022, our proposal was selected for Phase 2 to revise the campaign and its public-facing materials (2022–2023). At the time of this writing, we are finalizing Phase 2.

At our Phase 2 kick-off meeting with the OHPI partners, we heard about changes in public opinion on homelessness in Lexington and in the movement's goals and objectives. While the pandemic disrupted the ability to collect accurate data regarding how COVID-19 impacted the numbers of unsheltered people experiencing homelessness (Rodriguez et al., 2022), according to the U.S. Department of Housing and Urban Development's 2021 Annual Homeless Assessment Report, the number of sheltered individuals with chronic patterns of homelessness increased by 20 percent between 2020 and 2021. Financial difficulties stemming from COVD-19 closures increased financial instability and housing insecurity while also curtailing access to needed services; in general, COVID-19 had a disproportionately high impact on people who already faced greater systemic barriers. Once shelter in place orders were lessened, the visibility of people experiencing homelessness likely increased as well.

As a result, we learned that while the public perhaps understood the reasons someone may experience homelessness, there was increased demand to know what was being done about it. To make visible the efforts taken to end homelessness, the OHPI leaders wanted to shift campaign priorities from dispelling harmful myths about homelessness to more ideological conversations about homelessness causes and potential solutions. As a result, the website, given its public-facing nature, needed to be redesigned. In the following section, we combine existing scholarship on interface analysis and homelessness studies to situate the role of LEH's website interface in the LEH movement, as it was redesigned to reflect movement priorities, ideological contexts, and local user needs.

LITERATURE REVIEW

Platform and Interface Analysis

Research across technical communication, writing and communication studies, and rhetoric and composition have been invested in untangling how digital technologies embed, reinforce, or respond to ideologies and value systems, particularly in ways that often reinscribe harm for marginalized users or communications. For example, in Cynthia Selfe and Richard Selfe's (1994) landmark article "The Politics of the Interface," they conclude by arguing that computer interfaces' default settings reinforce whiteness, colonialism, and class privilege and thus offer just one opportunity to identify and "remap the educational, political, and ideological spaces we want to occupy" (Giroux, 1992, p. 155, cited in Selfe & Selfe, 1994, p. 500). With this, Selfe and Selfe offered a call to not just name how interfaces perpetuate inequality but to engage in efforts to actually redress it.

Their call has not gone unanswered. Recent research has been concerned with linking technologies to larger concerns regarding algorithmic bias (Benjamin, 2019; Noble, 2018), authorship and intellectual property (Pickering, 2020; Reyman, 2013), discriminatory design (Costanza-Chock, 2020), toxicity and harassment (Gruwell, 2015; Sparby, 2017; Trice & Potts, 2018), democratic participation and civic engagement (Dorpenyo & Agboka, 2018; Sano-Franchini, 2018), privacy and surveillance (Banville, 2020; Beck, 2015), voter (dis)enfranchisement (Jones & Williams, 2018), and more. Edwards' and Gelms' 2018 special issue of *Present Tense* centered specifically on the rhetorics of platforms; in their introduction, they write, "Platforms grant access, but they also set the conditions for that access. Platforms promise to be catalysts for public participation, but they also mask their role in facilitating or occluding that participation. Platforms make decisions, but they often downplay, obfuscate, and/or black box those decisions." As they discuss, though platforms often masquerade as neutral

technologies, they are built and maintained both on implicit and explicit “assumptions, biases, and erasures” that can perpetuate inequality and harm (Edwards & Gelms, 2018). Identifying these gaps is a critical step to design inclusive platforms, both on the surface and in the code, and understand the limitations of our interfaces. Only then can we take up Walton, Moore, and Jones’ (2019) call to redesign any technology of oppression and injustice alongside the perspectives and voices of those most vulnerable to structural silencing, dismissal, and harm.

User interface (UI) and user experience (UX) research provides valuable insights into how technology users interact with, shape, and are shaped by particular platforms. Because interfaces are most immediately available to end-users (in comparison to the developers, programmers, and software engineers that create and maintain platforms on the back-end), research has demonstrated that this is a fruitful place to continue to examine—and then, as we argue, to redress—technologies’ impacts. However, while UI scholarship tends to examine how users engage with the visual elements of an interface such as buttons, links, navigation bars, and the like, UX research focuses more on how end-users interact with a product or website, including their feelings and reflections about their experience. Digital platform analysis draws in elements of both UI/UX, but further extends it to examine “the way technology users interact with the platform, the organizations that host them, one another, and/or the ideas, objects, and spaces that make up the world around us” (Sano-Franchini, 2022). Put differently, digital platform analyses offer the opportunity to look at micro-scale interactions while also attending to the macro-level influences on an interface or platform. Recent research includes analyses of Facebook (Pandey & Chen, 2021; Roundtree, 2017; Sano-Franchini, 2018), Reddit (Massanari, 2018; Richter, 2021), email (Moses & Katz, 2006), Twitter (Lam & Hannah, 2016; Zhang et al., 2020), Instagram (Jones, 2021), YikYak and Snapchat (West & Pope, 2018), YouTube (Chong, 2018; Yusuf & Schioppa, 2022), Grindr (Faris, 2016; Green, 2021), and more. Other work has also interrogated a wide range of websites (Ansari, 2019; Maurer, 2022), search engines (Hocutt & Ranade, 2019; Johnson, 2020), and hashtags (Homer, 2020; Shelton, 2019). By drawing from a diverse range of methodologies and frameworks, this body of scholarship responds to calls to attend to the computational, economic, sociopolitical, and ideological implications of interfaces while still centering technology users.

Homelessness Studies

Given this article is a case study of one homelessness prevention and intervention campaign, it is important to note the existing body of interdisciplinary scholarship on homelessness. Because homelessness is often incorrectly assumed to be a result of an individual’s moral failure and/or poor economic choices, the overlapping structural causes of homelessness—such as racism and capitalism—may go unacknowledged and unexamined (and therefore, unaddressed). Building from Forte’s (2002) social work research on homelessness, Schuster (2022) argues that attending to such stigmatization of homelessness is a precursor for larger structural change (p. 14) and that listening to those with firsthand experience allows both scholars and advocates to understand the systemic biases that shape responses to homelessness in the first place (p. 4). Given that, it is unsurprising that research in this area often uses narratives from individuals experiencing homelessness (IEH) to resist and reframe the harmful misconceptions associated with being unhoused or unsheltered, with specific focuses on career training and rehousing efforts (Trauth, 2021), understanding technology access and literacy skills (McGrail et al., 2018), interrogating social and economic causes for spatial segregation in public and private space (Schuster, 2022), and improving long-term approaches to risk communication (Kalodner-Martin, 2022). Narratives also often play a role in nonprofit, community, and federal campaigns, though other approaches to understanding and intervening in homelessness, such as point-in-time counts, data from human service providers, and funding requests also provide valuable insights regarding local needs and demographic trends.

However, work is needed to bring homelessness advocacy efforts into conversation with digital interface studies. Many initiatives aimed at spreading awareness and supporting the needs of LEH have a digital presence, which means that a wide variety of stakeholders involved in housing and homelessness—such as policymakers, funding agencies, local providers and other assistance programs, advocates and volunteers, and people who may be experiencing homelessness

themselves—are likely to engage with these interfaces. As we explore next, digital interfaces also play a critical role in reflecting and responding to ideological needs in user-friendly and justice-oriented ways.

METHODS

Data Collection

In our IRB-approved study, we define the LEH website interface as the overlap between user engagement, website content, and information architecture. The latter facilitates the campaign's ability to tell its story by creating a path for its users that aligns with the campaign goals. To capture this overlap, we adopted a mixed methods approach. Specifically, we collected and analyzed the OGSM organizing documents (Objectives, Goals, Strategies, and Measures) and content strategy session notes with OHPI representatives focused on the website interface design, as well as screenshots from the publicly available Phase 1 website iteration and screenshots from the Phase 2 mockups. In addition, we analyzed write-ups of interviews conducted with LEH stakeholders—including OHPI leaders, representatives from LEH partners, homelessness advocates, and people experiencing homelessness—that were repurposed into LEH website content. As part of our ongoing efforts to make the website more accessible and usable, in November 2022, we circulated an anonymous website user survey on the LEH website, LEH listserv, and affiliated social media accounts. The survey questions are included in the appendix. At the time of this writing, 11 users have completed the survey.

Data Analysis

To understand the way that ideological shifts in the LEH movement shaped (and were shaped by) the website interface, we draw on two analytic frameworks: Spunizzi's (2013) "three levels of scope" (macro-, meso-, and micro-) to capture multileveled change and Sano-Franchini's (2018) critical interface analysis. We adapt Spinuzzi's framework to see the way the organizational values are mediated and reimagined across multiple levels of the interface. To do this, we scaffolded the three main goals of the LEH campaign in the design of the website interface: first, people had to *understand* what homelessness is and be aware of its prevalence in Lexington. Next, people had to *empathize* with people experiencing homelessness. Then, people had to *act* to help end homelessness. We mapped these goals onto different levels of activity including planning documents, public facing content, and information architecture. The levels of scope also help us to capture the ideological shift from Phase 1 to Phase 2. Ideologically, in Phase 1, LEH focused on an individual's microinteractions with homelessness. In Phase 2, the LEH movement shifts to taking a macro-level focus on systemic inequalities and solutions. As we expand upon in the following section, the differences in interface design across these two phases is a reflection of our joint efforts with LEH stakeholders to position the website as a tool that is explicitly committed to facilitating housing justice and equity.

While levels of scope help us to see ideology as it is realized across levels of activity, we layer the three levels of scale with critical interface analysis (Sano-Franchini, 2018). Given our role in redesigning the interface to reflect ideological changes, critical interface analysis affords us the lens through which to interrogate the values and assumptions that are imparted through the content choices we make and the way that users are invited to engage with both the site and the issue of homelessness more broadly. As content creators involved as the project unfolds, we are able to extend critical user interface analysis beyond the end user perspective as we adopt the critical interface analytic to make design choices in order to make solutions-oriented impact visible and help users achieve the goals (understand, empathize, and act) as stated above. In the following sections, we analyze the LEH website interface along these three main goals and move from a descriptive analysis (analyzing the interface as it currently exists) toward explaining what choices we should (and aim to take) in the next iteration to support the shifting campaign goals and ideologies.

FINDINGS

As discussed, the first phase of the LEH campaign was designed to garner community support for ending and preventing homelessness. As such, the website interface primarily focused on introducing the Lex End Homelessness movement (which we coded as "Understanding"), dispelling harmful myths about homelessness ("Empathizing"), and encouraging community members to see themselves as part of the

homelessness solution ("Acting"). Rhetorical strategies involve raising awareness and invoking in the individual user a sense of community and social obligation, and the website itself was designed to showcase which partners invested in ending homelessness and, by extension, in Lexington as a whole. In Phase 2, based on user feedback and conversations with OHPI leaders, there is a shift from raising awareness to action and from the individual to systemic approaches to ending homelessness. In the below sections, we highlight the ways these goals were designed into and facilitated through the interface. We end each section discussing how we are currently meeting the ideological shifts in Phase 2 through the website interface.

Understanding: Increasing Awareness to Generate Support

As a newly launched movement, part of the Phase 1 OGSM (objectives, goals, strategies, and measures), developed collaboratively with OHPI representatives, included a goal to "engage effectively with stakeholders to ensure they understood LEH's mission, vision, and values (MVV)" and to garner support for the LEH as a community driven movement (OHPI OGSM, 2020). Another objective in Phase 1 was to "keep the community informed" through raising awareness about homelessness generally and in the Lexington community. In Phase 1, *Understanding* of LEH's MVV was facilitated through writing and design geared to establish ethos. Keeping the community informed was met through what we call writing to help people *learn more*, which included research-backed articles and accessible data.

Establish ethos

In Phase 1, LEH established its ethos through several forms on the website. The image below (Figure 1: What is LexEnd Homelessness?) is from the "About Us" page. The focus on this first website interface was to explain LEH as a collaborative movement with a focus on the people who make up the coordinated efforts.

Figure 2 is also located toward the bottom of the "About Us" page. A brief paragraph describes the importance of working together, and a carousel displays the logos of members of the LEH Continuum of Care.

The "About Us" page here is designed for a website visitor likely unfamiliar with the LEH movement or participating in the Housing Crisis Response System. By reading this "About Us" page, one sees briefly that there is a coordinated effort among providers toward ending homelessness in the Lexington area. What the coordinated effort looks like, though, is left undefined. This approach to establishing ethos is further repeated on the homepage. In Phase 1, one of the first pieces

Figure 1: What is LexEnd Homelessness

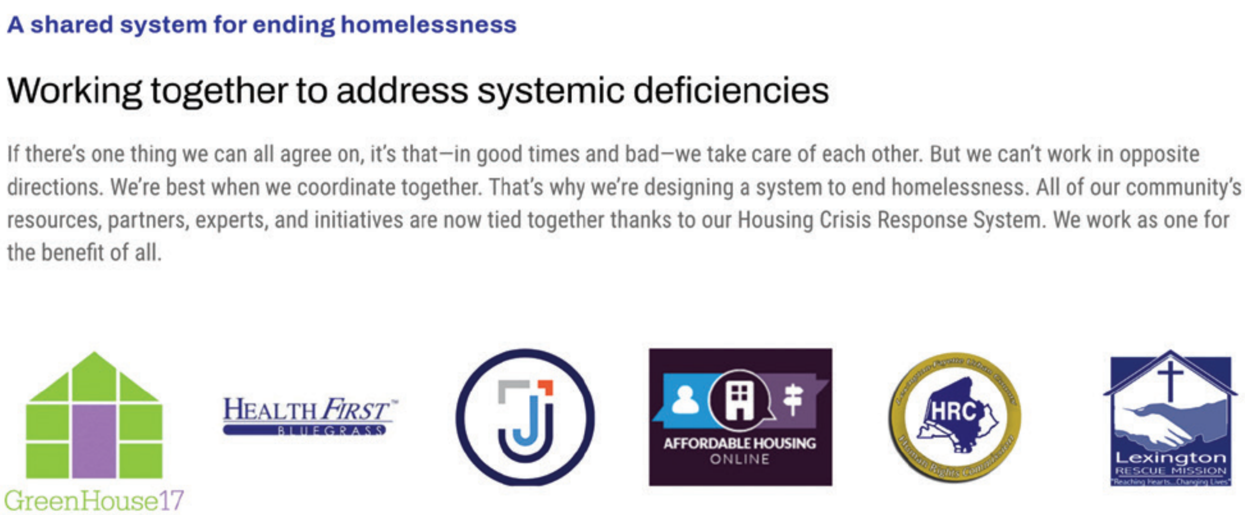


Figure 2: Screenshot of Carousel of Logos

Figure 3: LEH intro video

of content that the visitor sees is an About Us video (Figure 3).

With an objective to educate the public about LEH and to introduce some of its key leaders, the video establishes at the beginning a need for the LEH campaign by visually with the opening shot of a mural stating, "Together we are stronger" to its opening lines of: "It's time for our city to embrace a movement that opens doors of possibility for everyone." The goal is to help the general public understand why this movement

is needed and to emphasize why it requires stakeholders working together. It is important to keep in mind that an original objective of the LEH campaign was to rebrand a movement to end homelessness as one that was seen as solely within the purview of a government entity, to a comprehensive and coordinated effort across local agencies. Therefore, this video works toward educating the public while also garnering buy-in for its efforts. The video ends with a call to the user to learn more, give, and join the movement (by visiting the website, by following LEH on social media). In general, this call to "learn more" is a focal point of Phase 1.

Learn more

"Learn more" is the way that users are invited to engage with the Phase 1 interface and, by association, the LEH movement. This is reflected in the navigation and content pieces highlighted on the website. On the website, users are invited to click on a "Stories" tab, which includes "thought provoking articles" that "just may inspire you to see homelessness a bit differently than you have before" (Figure 4). In doing so, a user gains a researched understanding of homelessness to be better informed about the issue. These articles also provide background to key principles that underlie the LEH movement and the practices of the CoC members.

To dispel myths and educate the public, these research articles explain key concepts that are generally misunderstood about homelessness, including what it is and the reasons that an individual may find themselves experiencing homelessness ("It isn't a disease or an affliction, it is an inability to pay rent or make the mortgage due to a lack of structural support"), and other concepts like "housing first" (the idea that the best way to end homelessness is to get people housed). The articles end by inviting users to learn more, providing links to other articles and LEH social media.

In addition to the articles, two other webpages linked on the main navigation focus on helping users to *Understand* by learning more: "Get Involved" and "Resources." The "Get Involved" page on this website iteration features reports such as the *Annual Homelessness Assessment Report* and the *LexCount Report,* with an aim to "monitor trends and population characteristics of those without a home in Fayette County." Toward the bottom of the page, users are invited to download an "Advocacy tips page" (which includes ways to learn more and donate). The "Get Involved" page suggests that a way to solve homelessness is through increased awareness. Learning more as a solution is repeated on the "Resources" page, which brings the user to a public facing data dashboard. This data dashboard is one of the key Phase 1 deliverables. The purpose of the data dashboard is to provide accurate and timely data on people experiencing homelessness in Lexington. Along with the data dashboard, this page includes a video that explains the dashboard's functionality. Although both of the pages include content and data that stakeholders requested—especially the data dashboard, which partner organizations access when completing their own reports—the interface assumes key aspects about

Figure 4: Thought-provoking articles

its users: one, that users are people who are likely not experiencing homelessness; two, that users are misinformed about homelessness; and three, that once given the correct information, users will know what to do with the information.

Given the growth of increased public support for the LEH movement, the approach taken in Phase 1 to increase understanding was not ineffective. As initially a rebranding effort, it was quite successful. Key stakeholders reported appreciating the branding and the ability to attach themselves to the brand (and its mission). Website users in informal surveys indicate visiting the site to track data about homelessness and to learn more about the causes and solutions to ending homelessness. They report an increased understanding of LEH, which suggests that increasing general understanding is both needed and useful. However, though the content and design appeals to the user's sense of ethos via raising awareness, it located the responsibility for ending homelessness primarily in the individual partners working together and in the individual person, rather than in the structures that create and perpetuate housing inequality. Because of the newness of the campaign, the website was designed to be informative without being overwhelming. This meant that some necessary contextual information—such as what the Housing Crisis Response System is or what coordination could look like—was not included.

At the start of the Phase 2, we solicited feedback from site users in content strategy sessions and a survey. One of the first issues raised about the website interface was the data dashboard's functionality and usability. OHPI representatives report hearing from users that they were unsure how to use the data dashboard. While survey responses indicate that most users visit the site to "learn more," the comments on how to improve the site speak to the site and data usefulness. One respondent suggested a "Need to do more to drive traffic and make sure the public and providers are aware of the site and how it can be used. I'm heavily involved in this world but rarely visit the web site" (LEH website survey response). Not knowing how to use the data that is included on the site is an issue raised in another survey response: "Under resources there seems to only be data. While this may be a good resource for professionals, I was expecting information on what services community partners provide." This user wanted to understand not just data about homelessness but what the partners do in the community. Other users responded that they visit the site to "look for LEH news and events" and "seek resources about homelessness" neither of which is activity emphasized in Phase 1. What this suggested to our team is a need to reshape the content to help users know what to do with the information, which we discuss in more detail below.

While understanding LEH as a credible, collaborative data driven movement was achieved in Phase 1; in Phase 2, we wanted to help empower users to act. One strategy is to provide monthly data highlights that frame Lexington homelessness data for users and written in a way that policymakers can integrate it into their work. Further, at the start of Phase 2, OHPI leaders wanted to shift toward a campaign that emphasized homelessness as a systemic issue that requires larger scale intervention. Comments to OHPI staff also suggest that community members viewed homelessness as unsheltered people that needed to be "off the streets" and not the structural causes or efforts being taken that may not be recognized as such. In Phase 2, then, we are revising the LEH campaign and website to be systemic and solutions oriented. This is reflected in an update to the OGSM from making sure stakeholders understand who we are, to an objective to "engage effectively with stakeholders and ensure they understand the solutions to ending homelessness."

Thus far, this shift is evident in changes in the content focus. For example, the content in Phase 2 focuses on structural issues and the need to solve homelessness on a larger scale. In one piece, we profile an OHPI staff member who explains her role as building up the strength of the CoC and focusing more attention on homelessness prevention: "Homelessness is a complex problem that requires complex solutions, and it requires a little bit of everybody." As another example, we moved away from general research articles on theories and principles, and toward stories that showcase and explain LEH driven programming. This is evident in the website navigation: this spring we plan to roll out a new page called "Our Impact."

Designing ways to guide users to *understand* homelessness as a structural issue that requires structural changes and solutions is one of our primary goals. It can be difficult to capture homelessness as a structural issue in concrete ways. It can also be challenging to help people move beyond increased awareness to acting in ways that are effective in reducing homelessness. As we described

in this section, one tangible way we can make this shift is through strategic framing of content and data. As we detail in the next section, another way we can achieve this is by fostering empathy through collective stories.

Empathize: Using Narratives to Foster Community and Connection

As we discussed, the content and interface planning focused on three core messages: understand, empathize, and act. While messaging and design geared toward *understanding* focuses more on providing a general background to homelessness in Lexington and introducing the LEH campaign, *empathizing* encourages local stakeholders and the general public to connect to homelessness and community members who have or are currently experiencing being unhoused. Based on OHPI's local assessment of social barriers to ending homelessness prior to LEH's launch, we designed three key sub-messages under the umbrella of Empathize: *humanize*, *connect*, and *support*. These three themes were geared toward helping the broader Lexington community see homelessness as a structural problem that requires systemic change, instead of as an individual failure worthy of judgment and blame.

In Phase 1, Empathize focused primarily on developing the "Lived Experience" (LE) stories, which were designed with the goal of centering the voices of those most intimately familiar with being unhoused (Figure 5). LE participants were recruited from CoC partners or from social media, and after the initial interview, each conversation was written up as a blog post, approved by the participant, and shared on the LEH website and affiliated social media accounts. The total Phase 1 Lived Experience stories contained 12 narrative blogs, which shared participants' personal insights with LEH's audience of community members, CoC partners, local businesses, policymakers, funding agencies, and more.

The LE stories reflect on some shared themes: embodied experiences of homelessness, emotional responses to homelessness, and common barriers to safe and sustainable housing, such as addiction, domestic violence, incarceration, and medical trauma. However, participants also shared their moments of deep joy and relief, such as when one person, Lakelli, talked about receiving housing through Lexington's Habitat for Humanity partner and the impact it had for her own self-esteem and her family. By showcasing both participants' challenges and successes, the Lived Experience stories did more than just humanize people experiencing homelessness or evoke viewers' emotional responses to injustice, but also sought to foster an interest in and passion for supporting the mission, values, and vision of the LEH movement.

On the website interface (Figure 6), each story is designed as a "feature," with each participants' photo, name, title, and a powerful quote excerpted on the landing page before a user can navigate to the full story. This interface design choice permits users to preview participant

Figure 5: Lived Experience section header on a 2021 version of the LEH website

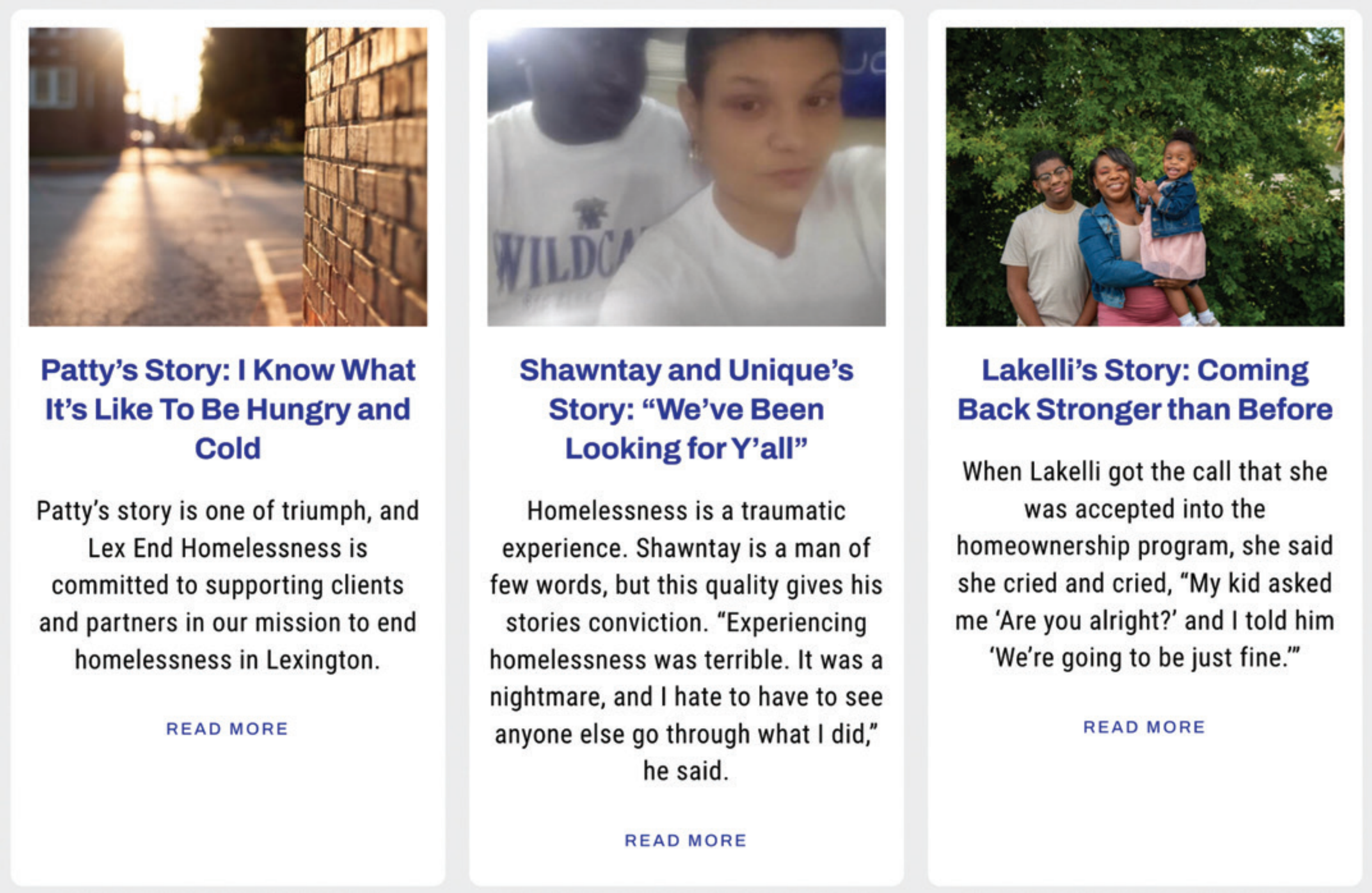


Figure 6: Screenshot of Patty's, Shawntay and Unique's, and Lakelli's LE stories

stories and challenges them to see participants not just as static words on the page, but as living, breathing, and diverse members of the Lexington community.

In Phase 2, we wanted to do something different. While attuning to and amplifying marginalized voices continues to be a cornerstone of LEH's commitment to social justice, we shifted directions and relaunched the Lived Experiences stories under the new design and name of Community Voices (Figure 7). We did this for several reasons: first and foremost, we wanted to emphasize that people experiencing homelessness are a part of the Lexington community, not separate from or outside of it. This is a critical first step in challenging the many stigmas that surround those who have or are experiencing homelessness.

Relatedly, we redesigned the story format. While Community Voices retained the original commitment to using stories as part of the justice-oriented approach to amplifying underserved and underrepresented perspectives, they are now formatted in a traditional Q&A interview structure. In contrast to the Lived Experience's more edited and narrative approach—which used the interview as inspiration and integrated key quotations from each interviewee but was still written up and synthesized by an Untold Content team member—the Q&A formatting preserves the original voice of participants. Because disrupting power imbalances between donors and recipients, CoC partner and client, and those with housing and those without is a central facet of LEH's mission, redesigning the interface of more recent stories to reflect participants' authorial agency is one way that users are invited to challenge preconceptions about what it means to look, sound, or even write like someone who may have experience with homelessness.

Given that 30% of respondents shared that hearing stories from a wider variety of people in Lexington was a primary reason for visiting LEH's website, we wanted this redesigned section to be more inclusive of the many stakeholders in the field of homelessness prevention and intervention. Though those who are working or volunteering with CoC partners have

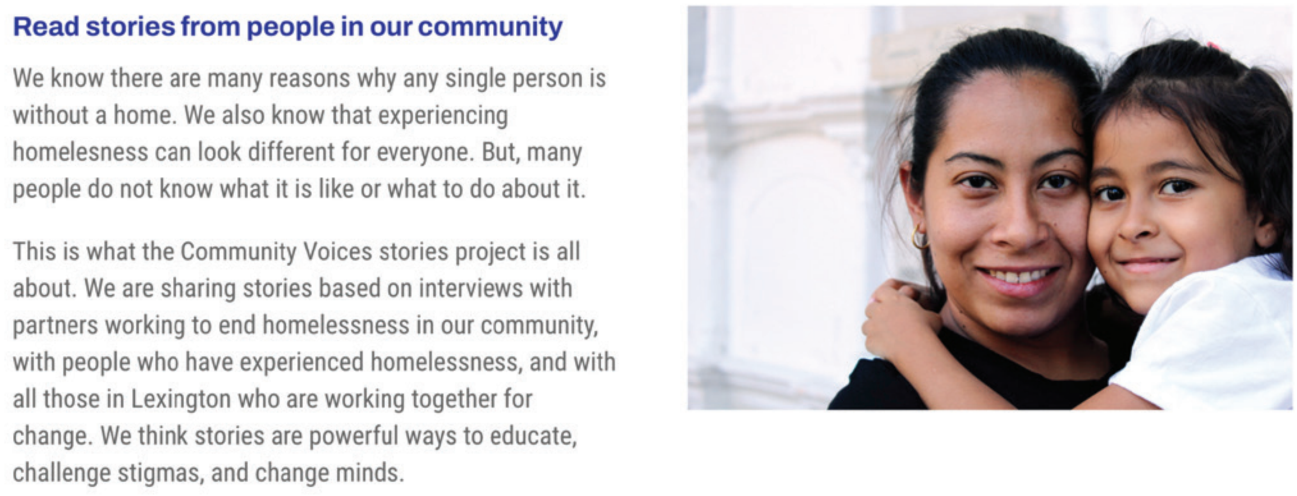


Figure 7: Community Voices section header on a 2022 version of the LEH website.

valuable experiential knowledge that could still fall under the term of "lived experiences," shifting to the more concrete name of Community Voices clarifies this section's purpose (to share stories from the community) and amplifies those who are already working to change the structural conditions that surrounding housing inequality. As we further discuss in the following section, highlighting these other perspectives serves as a powerful bridge between *understanding* and taking *action*. For example, Dustin and Jason are two people working on a local street outreach team in Lexington. Street outreach teams seek to make contact with people experiencing unsheltered homelessness, particularly in cold weather or other dangerous environmental conditions, and offer shelter, transportation, and other resources. Street outreach teams have established rapport with individuals experiencing homelessness and are an essential part of Lexington's intervention efforts; however, no content previously existed on the LEH website that explained street outreach, identified contact information, or shared insights from people who do this work. By featuring Dustin and Jason's interview in Community Voices, website and social media viewers could learn about this important—but seldom publicly discussed—community resource, but also gain information about how to more immediately support LEH's goals (such as donating clothing or items that street outreach teams know are most critically needed). As we will detail in the next section, situating requests for help or material donations in these first-hand accounts works to ensure that well-meaning efforts to support people experiencing homelessness are effective, ethical, and attuned to shifting circumstances and local needs.

Fostering a sense of empathy among interface users can still be a challenge. It is difficult to know what rhetorical strategies or design choices may resonate with viewers and move them toward taking action against homelessness. The website also uses empathetic messaging in other content pieces, such as media articles about defining homelessness and in donation materials, to invite all Lexington community members and allies to see themselves as part of the solution to the complex and multifaceted problem of homelessness. The transition between Lived Experience stories and Community Voices interviews offers just one salient example of how both content and interface design have evolved, and will continue to shift, over LEH's campaign history.

"Act": Fostering An Action-Oriented Approach to Social Change

In planning to launch the LEH campaign, OHPI's hope was that an understanding of LEH's goals, mission, and values and emotionally connecting to homelessness would equip community members and social media users to take action against the injustices of homelessness and housing inequality. Based on OHPI's goals and the relationships between CoC partners and the community, we selected three sub-messages to fall under the umbrella of Act: collaborate, coordinate, and donate. Taken together, these themes were geared toward giving Lexington community members options for

tangible steps that they could take to end homelessness in sustainable, effective, and accessible ways.

In Phase 1, action-oriented content and interface design was primarily focused on the launch of the LEH donation campaign. We focused on two primary audiences for the donation campaign: community members and small businesses, who are more likely to offer smaller donations (called Community Heroes), and larger organizations, foundations, and wealthy philanthropists who may be able to offer a larger amount of financial support (called Community Builders). Both levels of funding emphasized that donations—whether $5 or $50,000—to homelessness intervention and prevention efforts demonstrates a vested interest not just in LEH, but in the larger Lexington community.

For the Community Heroes level, key messaging included “no contribution is too small to make a difference” to show potential donors that even smaller amounts of money could make a material difference in the lives of those experiencing homelessness (Figure 8). We situated key examples of some typical donation amounts in common needs of those who are unhoused, such as $25 for a one-month bus pass. This process required consulting with OHPI, CoC partners, and local Lexington resources to ensure that information was accurate and, thus, persuasive. Given that more people are likely to donate on the Community Heroes scale, this content appears toward the top of the Donation page.

For Community Builders, we aimed to invoke a sense of social responsibility and community leadership. By using language like “This work needs people like you to commit to investing in the solution,” content acknowledges that sustainable responses to ending homelessness, such as increasing affordable housing options, often does require significant financial support (Figure 9). However, we drew from some similar rhetorical strategies by offering a range of options and highlighting the length and scope of a financial gift’s impact.

Recent survey responses and feedback solicited from OHPI between Phase 1 and 2 suggested a need to revise and expand opportunities for taking action. Though Phase 1 messaging included statements like “working as one for the benefit of all” and stressed a “shared system for ending homelessness,” few resources existed for community members who wanted to take a more active role in homelessness advocacy work. Furthermore, the emphasis on individual donation could be revised to encourage a collective approach to redressing the structural issue of homelessness. Interestingly, at the time of this writing, no survey respondents shared that they visited the website to make financial donations to LEH, which further suggests that solely focusing on monetary support may have been limiting users’ engagement with and knowledge of other advocacy opportunities.

While soliciting financial support continues to be important and the Community Heroes and Community

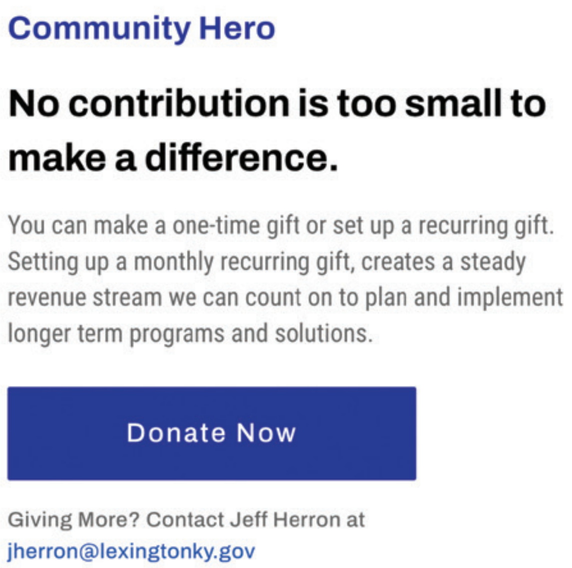


Figure 8: Community Hero donation information

Figure 9: Community Builders donation information

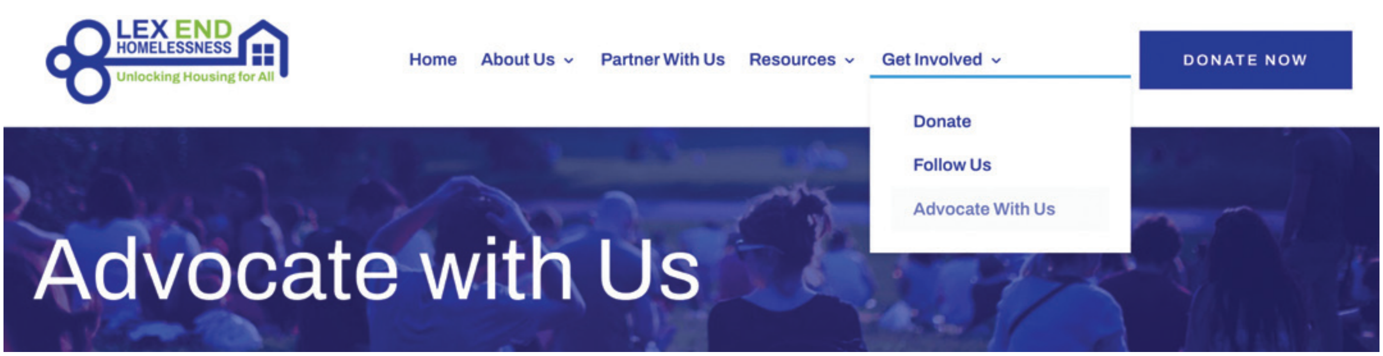


Figure 10: Get Involved dropdown menus on the revised LEH website

Builders levels remain on the Donation page of the website, we have now shifted to focus on developing website content that highlights other possibilities for justice-oriented and collaborative action. The revised website interface includes a navigation bar option for Resources, with “Advocate With Us” being one of the dropdown menu items (Figure 10). This page contains four main options: information on how to request a presentation from OHPI staff members, advocacy tips, a guide on addressing common concerns about homelessness, and landlord resources for those looking for affordable housing options in the Lexington community. Taken together, these offer a more structural and hands-on approach to social change that is still situated in local contexts and shifting needs.

For example, we developed a guide for addressing concerns about homelessness after a neighborhood association requested information about how to respond to some common questions community members had, such as what to do when someone may be experiencing homelessness during dangerous weather conditions or what information is necessary to give a first responder if someone without access to housing is having a medical emergency. This guide follows a Q&A format to help readers find the appropriate information quickly and includes updated contact information for partners and resources, including overnight and day shelters, transportation services, and medical personnel. This guide also refers to some commonly requested donation items and ways to get involved with local partners.

Because Phase 2 is ongoing at the time of this writing, resources are currently being developed to engage users in action-oriented approaches to ending homelessness in Lexington. One of these involves a document that explains House Bill (HB) 197, which would assist people experiencing homelessness in obtaining a state ID. Because lacking an ID can be a barrier to applying for housing, employment, voting, medical care, and other essential support services, supporting HB 197 is another way that Kentucky community members can shape important policy decisions surrounding homelessness. In addition, we are creating an online resource guide (to be linked on the “Advocate With Us” page and, given its timeliness, the LEH homepage) with talking points for community members to contact their representatives, as well as a social media toolkit for local leaders to refer to when making their voting decisions. Resources like this move the onus of “ending homelessness” past an individual monetary donation and expand opportunities to interrogate the structural conditions that sustain homelessness.

Another resource includes recruitment and training materials for LexCount, the point-in-time count of people experiencing homelessness on a single night in January 2023. These materials explain what LexCount is and why it provides critical insights for LEH’s work, how to assemble a team of volunteers, training required, and necessary forms and documentation. While these materials are still being developed, we—along with the OHPI team, CoC partners, other Untold staff, community members, and website users—are enthusiastic about the range of options available to those who are passionate in taking collective action against injustice.

CONCLUSION

Future Phase 2 plans include rolling out the revised website and subsequent user testing on the interface functionality and content usability. While this is an ongoing project, our aim in writing this article was to show how industry practitioners can apply theoretical frameworks to understand the way ideology is built into interfaces and to enact changes that move past awareness-raising to taking action against injustice. Because design is necessarily about change—change in functionality, change in aesthetics, and change in processes and practices it enables—it is also inherently about social justice. As we have explored in this piece, we must continually build opportunities to intentionally align industry objectives with social justice-oriented processes and outcomes and be willing to reflect on and revise them when circumstances and needs shift. Here are some suggestions for actionable starting places:

- Use the 4Rs heuristics—recognize, reveal, reject, and replace (Walton et al., 2019)—to understand instances of injustice and propose solutions alongside the expertise of marginalized communities and voices.
- When tasked with interface updates, consider the sustainability of the changes being made on a systemic, organizational, and individual level. If interface changes diminish the capacity of an entity’s sustainability, it may perpetuate resource inequities.

- When partnering with organizations, ground your work and practices in their mission, attending to the kind of orientations and actions they hope to cultivate.

Furthermore, as academics who are also practitioners, we similarly believe we must move beyond raising awareness through analyzing what is happening outside of academic spaces to actively doing more of this work in messy and evolving, but justice-oriented ways. As such, we must be committed to creating artifacts that are circulated outside of academic spaces so that external stakeholders have access to our knowledge work in the world and so that we can amplify community expertise within our own research and teaching. Here are some ways to continue to practice our learning outside of academic walls:

- Be aware of how industry norms shape what is and is not possible when designing technical writing curricula. This is also true for work occurring within corporations and for nonprofit organizations.
- Build in classroom processes that can facilitate participatory learning goals and outcomes—for example, by developing reciprocal relationships with local communities and by inviting them to shape classroom deliverables. Many examples of reflexive and ethical approaches to conducting research alongside marginalized communities exist; for one example, see Cana Uluak Itchuaqiyaq's (2023) Equitable Arctic Research: A Guide for Innovation.
- Balance asking students to read within our academic field with real case studies that help students trace interface development over time and the ensuing impact of design changes.
- However, to make these recommendations viable, departments must value this kind of intellectual work and instructors must be committed to interrogating how terms that guide our commitments to social justice, such as power and legitimacy, require ongoing reflexivity (Shelton & Warren-Riley, 2022).

We hope from this article you can see that we don't always get it right, that our best theoretical intentions may fall short when put into practice and design; yet, it is from sharing this process that we learn how to better move from critical analysis to critical practice.

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APPENDIX

Survey Questions

1. What is your relationship to LEH? Please select all the statement(s) that apply.
2. On average, how often do you visit the LEH website?
3. Why do you use the Lex End Homelessness website?
4. When you visit the LEH website, how easy is it to find the information you are looking for?
5. Did you face any challenges using the LEH website?
6. How can LEH improve the website?

Driving Innovation: Analyzing Mobile Ridesharing App Interfaces and Moving Toward Community-Based User Experience (CBX)

doi.org/10.55177/tc378854

By Laura L. Allen and Gavin P. Johnson

ABSTRACT

Purpose: Our article interrogates mobile ridesharing apps as sites where digital interfaces, cultural practices, and rhetorical discourses intersect. We establish counter-histories of mobile ridesharing apps and conduct a critical interface analysis of select apps to demonstrate how *innovative interfaces* imagine a universal user while culturally specific apps make space for community-based user experience (CBX).

Method: This article brings together Haas' digital cultural rhetorics (DCR) framework with Brock's critical technocultural discourse analysis (CTDA) to zoom in on the cultural ideologies, form, and function of mobile ridesharing apps.

Results: Our analysis highlights how developers of culturally specific apps inscribe and promote an ethos of community for users marginalized by Western ideologies regarding race, gender, and sexuality. We show that, despite working in prescribed programming and coding structures, these app developers take advantage of forms and functions to amplify their cultural significance.

Conclusion: Rhetoric, technical communication, and UX researchers and practitioners should look to culturally specific mobile ridesharing apps as exemplars for designing technologies that center and acknowledge multiply-marginalized communities and their DCR practices. We insist CBX be part of interface design.

Keywords: Mobile Applications, Ridesharing, Digital Cultural Rhetorics, Critical Technocultural Discourse Analysis, Community-Based User Experience (CBX)

Practitioner's Takeaway:

- A critical investigation of the form, function, and cultural ideologies of mobile ridesharing app interfaces provides a holistic approach for understanding the experiences of individuals and communities rarely centered in UX.
- Practitioners can apply our method and analytical framework on existing interfaces, and use the results to inform future mobile ridesharing app development.

Mobile applications (apps)—whether mobile-first, web-based, or hybrid—shift how people connect, share, interface, and move within cultures. No longer bound to a single wired location, users frequently communicate, gather information, and enjoy entertainment while moving through the world via location-enabled technologies, such as smartphones and wearables. The intersection of mobility, transportation, and technology is particularly interesting for researchers and practitioners working in rhetoric, technical communication, and user experience (UX) (Frith, 2015; de Souza e Silva, 2016; Pflugfelder, 2017), but, to date, frameworks for analyzing mobile ridesharing apps as critical interfaces have been limited. Nonetheless, global engagement with mobile ridesharing apps can inform researchers and practitioners about this critical intersection and its impact on the design of digital interfaces.

Connecting a network of potential riders with nearby drivers, mobile ridesharing interfaces facilitate alternatives to other forms of transportation. The rise of mobile ridesharing apps correlates with the growth of a larger "sharing economy" that seeks efficiency and profits by pairing buyers with sellers through information technologies (Sundararajan, 2016; Hahn & Metcalfe, 2017). The appeal of mobile ridesharing apps, like industry giants Uber and Lyft, depends on ease of access, functionality, and form as well as the cultural capital of rhetorically situated *innovative interfaces*.

Innovation, here, functions as a Western cultural ideology prioritizing domineering change and capitalistic gain above the needs of cultures and communities in which the technology emerges and exists. Discourses of technological innovation, Liz Hutter and Halcyon M. Lawrence (2021) argued, reinscribe injustice through a design that

> promotes an uncritical acceptance that, for the sake of innovation, new technologies could be developed independent of well-articulated problems and well-defined communities of users, leading to a "benign form of cultural dominance." Embedded in this notion of cultural dominance is inequality in which the innovator sets themselves up as the problem solver "and reduces [the user] to simply the beneficiary of the solution." (p. 151)

Accordingly, *innovative interfaces* value universalized design based on the preferences of a relatively small collection of creators and designers. Indeed, many technologies reinscribe injustices through "cultural rhetorical work that privileges certain epistemological frameworks and sponsors certain ideological agendas, thereby benefiting some communities more than others" (Haas, 2018, p. 413). Such work develops *innovative interfaces* that privilege Western, white, straight, cis-male, able body/minded individuals and discredit, ignore, or even appropriate cultural practices that have evolved from and for communities excluded by systemic barriers (Selfe & Selfe, 1994; Stanfill, 2015; Arola, 2017; Tarsa & Brown, 2018; Jones, 2021). *Innovative interfaces* on mobile ridesharing apps are, therefore, ill-equipped to handle specific cultural and identity-based needs of mobile rideshare app users.

Critical analysis of mobile ridesharing apps must address both the technical and embodied aspects of an interface. An interrogation of an interface's technical elements, such as its function and form, seems obvious considering the goals of UX, but embodied experiences also inform and are informed by mobile interfaces by centering social identities, cultural biases, and physical bodies to more fully understand a user's experience (Farman, 2012; McCorkle, 2012). Wang and Gu (2022) have shown, for example, that mobile photo- and video-editing app interface designs can subvert certain cultural virtues (e.g., Chinese values) with Westernized beliefs (e.g., American beauty standards), which they conclude can have "negative psychological and behavioral impact" (p. 394). With these important points in mind, how do mobile ridesharing app interfaces locate and move us through the world? We ask this question from two perspectives: the technical movement that such interfaces hail and the cultural movement that such interfaces dis/empower.

This article argues that researchers and practitioners in rhetoric, technical communication, and UX should critically analyze mobile ridesharing apps as digital cultural rhetorical interfaces. We first present counter-histories of ridesharing and examine the relationships between older and newer technologies. This reveals the politics of *innovative interfaces* that secure dominant cultural norms through an imagined universal user. Next, we introduce our analytical method for studying the culturally specific influences of digital interfaces. Our method pairs Angela M. Haas' (2018) Digital Cultural Rhetorics (DCR) theory framework with Andre Brock's (2018) Critical Technocultural Discourse

Analysis (CTDA) technique. This pairing offers unique opportunities for critically analyzing digital interfaces, especially mobile ridesharing apps. Using this method, researchers and practitioners can account for individual and community identities as carefully as they attend to technical features. By critically analyzing mobile ridesharing apps that exemplify the dominant *innovative interfaces* of Uber and Lyft alongside apps that exemplify culturally situated interfaces, we find that:

- Community-Based User Experience (CBX) must be integrated as a UX audience analysis strategy, as it more fully accounts for the histories, experiences, and accessibility of marginalized collectives.
- The interrogation of the mobile application, itself, as well as the interfaces of specific applications must remain central to the work of UX/UI testing.
- UX studies would benefit from centering features that marginalized users cite as most significant to how their identities intersect with their use of mobile apps.

We conclude with a targeted list of research and practitioner takeaways for those approaching mobile ridesharing and its digital interfaces. By making space for deeper analysis of mobile ridesharing app interfaces, we challenge designers and users to consider their positionality and entanglements when moving in the world via these technologies.

COUNTER-HISTORIES OF RIDESHARING

When using mobile ridesharing apps, we mark ourselves, our embodied needs, and share these needs with others. In other words, we reveal and share the unique parts of our identities and cultures through actions on a mobile device more readily than we might in everyday conversation. Even so, discourses of technological innovation and paternalism encourage mobile ridesharing interfaces to be designed for universalized experiences (Hutter & Lawrence, 2021). This universalization via *innovative interfaces* makes even more poignant Jennifer Sano-Franchini's (2018) question: "On what memories, literacies, and histories does the interface rely?" (p. 392). Such an inquiry invites careful and thorough analysis of cultural specificities and experiences from researchers and practitioners interested in UX and interface design.

One way to begin this work is by interrogating counter-histories of technologies. Here, we borrow counter-histories from Gabriel Rockhill (2017) as a way to not simply invert or reverse problematic histories but uncover/unearth the very cultural logics that make certain histories possible (p. 3; see also Hawk, 2007). While we believe this kind of counter-history work can contribute to the current turn toward antenarrative in technical communication (Jones et al., 2016), we do not see these as synonymous concepts. The counter-histories of ridesharing we broadly outlined below demonstrate how considering pre-digital cultural technologies and community practices deepen the interrogations of ideologies that support the form and function of current mobile app interfaces. This enables analysis that can influence design choices and prevent the reinscription of problematic universalized experiences in digital interfaces.

While ridesharing has been popularized in contemporary North American media and digital landscapes, a long history of ridesharing as a cultural technology is evident in other historical and geographical locations. For example, in several South African countries, issues with rail and bus systems led people to find transportation that more adequately fits their everyday needs (Mitchell, 2014). Used in South Africa and Zimbabwe, the Kombi—a Volkswagen Type 2 produced between 1979 and 1991—was larger than a car but not as large as a bus. The vehicle accommodated six passengers, allowing those traveling in the same direction to ride together and split the fare. Here, the system was the transportation technology, and it has been active in South Africa since the 1970's and 1980's. Similarly, Kombis became the "diaspora fleet" in cities like Harare, Zimbabwe, as citizens found ways to navigate the constantly fluctuating and unpredictable government transportation systems (Mazarire & Swart, 2014). This ridesharing system was mapped onto mobile applications and presented as a new form of transport while barely acknowledging and properly crediting the Black diasporic communities from which it derives.

In a 2017 podcast episode of NPR's *How I Built This*, connections between ridesharing in African countries and ridesharing logistics in contemporary mobile apps were made very clear. Host Guy Raz interviewed John Zimmer, the co-founder of Lyft. In the interview, Zimmer tells a story of how co-founder Logan Green traveled to Zimbabwe and observed

the citizens who, Zimmer claims, shared rides out of "necessity" (Raz, 2017). He took note of Zimbabwean entrepreneurs in Kombi vans who charged market rates for transit routes they formed and made money from travelers needing to go in the same direction. Green then took what he observed back to the United States and launched a similar ridesharing system in 2007 for college students traveling across California. This mobile app carpooling system was originally named Zimride because it was built on Zimbabwean transportation norms. In 2013, the founders wanted to shift to the on-demand ride model that currently characterizes ridesharing. They sold Zimride assets to Enterprise Holdings and shifted all resources and employees to a new company—Lyft. Uber, which launched in 2008, and Lyft currently dominate North American ridesharing markets.

Despite popularity and success, both Uber and Lyft have been harmful and discriminatory for communities that are marginalized by race, gender, and sexuality. Specifically, Ge et al. (2016) found that the Black riders on Uber were three times more likely to have rides canceled, particularly if they had "Black-sounding" names. Similarly, drivers were more likely to take women on longer, more expensive rides even if more efficient routes were available (Ge et al., 2016). When confronted with this data, Uber executive Rachel Holt released a statement reading, in part: "Ridesharing apps are *changing a transportation status quo* that has been unequal for generations, making it easier and more affordable for people to get around" (White, 2016, emphasis added). Similarly, Lyft spokesperson Adrian Dubrin said, "Because of Lyft, people living in underserved areas—which taxis have historically neglected—are now able to access convenient, affordable rides" (White, 2016). These appeals to innovation, in spite of evidence of prevalent discrimination, shield companies and their interfaces from critical reflection and culturally informed interface (re)design.

Uber and Lyft have since adjusted their operating processes, but researchers have still found evidence of discrimination based on race, gender, and perceived sexuality (Mejia & Parker, 2018), as well as rider-to-rider discrimination when shared services (such as uberPool or Lyft Line) are considered (Moody et al., 2019). Additionally, these ridesharing apps continue to be conduits for perpetrators of sexual assault, with some women even filing lawsuits against Uber and Lyft directly (Goldfine, 2019; Cramer, 2019). The issues of gender-based and race-based assault and discrimination are particularly egregious with a fuller understanding of rideshare app histories. When we understand that Green's idea for Lyft was lifted (literally) from seeing Zimbabwean ridesharing that was not yet mapped onto a mobile digital interface, the discrimination issues in North American ridesharing are quite paradoxical. When we consider Ge et al.'s (2016) work, it's ironic that Black people are hindered from fully participating in a technology that would likely not exist if it were not for Black people.

In light of these issues of bias, discrimination, and assault, North American entrepreneurs launched rideshare and transportation companies and platforms designed to be more accessible to the communities left behind by the initial designs of Uber and Lyft (Table 1). In 2014, Godwin Gabriel launched Moovn, a ridesharing app originally presented and marketed as a safer option for Black riders. Though Moovn has shifted focus in recent years to create digital production opportunities for Tanzanians, their early focus on Black-friendly ridesharing in the United States positioned them as one of the first companies offering an alternative to Lyft and Uber. In 2016, Safr launched as a Boston-area ridesharing app solely for women. Like the early days of Moovn, Safr worked to present community ethos through rhetorical interface design that explicitly lent itself to the safety and perceived interests of women. The rideshare launches continued as the founders that followed focused on regional support in addition to race, gender, and sexual identities. Aisha Addo launched the Toronto-based app, DriveHER, in 2018 with a particular emphasis on the safety of women. HERide is another women-only ridesharing app with Jillian Anderson, Devynne Starks, and Kiersten Harris all being cited as founders. HERide, which launched in 2020, invests in a ridesharing model attentive to social justice issues in Atlanta communities while providing opportunities and safe rides for those who identify as LGBTQ or women. Finally, Go Girl Ride, a developing Portland-based ridesharing company founded by Trenelle Doyle, is clearly committed to marginalized communities. Other than Safr, all of these are Black-owned apps. Their respective missions clearly center those neglected and unserviced by dominant rideshare platforms and models. Their intentions are made clear in both discourse and design. While many of these apps are in early stages of development, have regional functionality, or have

shifted in their business models since their founding, we analyze the exigencies of their launch and highlight user experience design features integrated with the intent of inclusivity for select communities.

By considering the global emergence of mobile ridesharing apps within larger rhetorical and geographical histories of ridesharing, we are able to understand, in part, the relationship between new and old technologies, the relationships between communities and technologies, and interrogate the politics of *innovative interfaces*. This knowledge is essential in understanding the DCR of mobile ridesharing app interfaces and sets the stage for deeper investigation into the technocultural discourses surrounding *innovative interfaces* as well as culturally specific interfaces.

CRITICAL METHODS FOR ANALYZING MOBILE RIDESHARING APP INTERFACES

Framework for Analysis

The interfaces of Westernized apps such as Uber and Lyft operate on a universalizing design that privileges the cultural ideologies and embodied practices of white, straight, cis-male, able body/minded, middle class people. This critique was grounded in what Angela M. Haas (2018) termed “digital cultural rhetorics” (DCR). DCR inextricably links bodies, identities, rhetoric, and technology, and these links are characterized by power dynamics in culture (p. 412). DCR methodologically uses a “rhetorical repertoire” that includes:

- interrogating the politics of digital interfaces;
- studying digital rhetorics in relation to/with specific communities and cultures of practices;
- examining the relationships between older and newer technologies;
- valuing diverse bodies; and
- reassessing access. (Haas, 2018, p. 413)

This repertoire facilitated our understanding of *innovative interfaces* of mobile ridesharing apps like Uber and Lyft while also interrogating interfaces that privilege cultural practices beyond the Western, white, cis-male experience.

DCR, as Haas explained it, acts as a unifying framework of various theories from technofeminism, critical race theory, cultural rhetorics, and digital rhetorics. As such, it does not, necessarily, dictate a specific method or technique for analyzing interfaces critically. To operationalize DCR, we paired it with André Brock’s Critical Technocultural Discourse Analysis (CTDA). According to Brock (2018), CTDA

> is a multimodal analytic technique for the investigation of Internet and digital phenomena, artifacts, and culture. It integrates an analysis of the technological artifact and user discourse, framed by cultural theory, to unpack semiotic and material connections between form, function, belief, and

Table 1: Background information for ridesharing apps organized by most recent launch year

Rideshare Application	Launch Year	App Founder(s)	Primary Operation Location	Primary Intended Users
Go Girl Ride	To Be Announced	Trenelle Doyle	Portland, OR	Women, Femmes, non-binary folks, and allies
HERide	2020	Jillian Anderson, Devynne Starks, and Kierten Harris	Atlanta, GA	Women
DriveHER	2018	Aisha Addo	Toronto, ON	Women
Safr (originally known as Chariot for Women)	2016	Michael Pelletz	Boston, MA	Women
Moovn	2014	Godwin Gabriel	United States	Black and People of Color
Lyft (originally known as Zimride)	2007, 2012	Logan Green and John Zimmer	United States	No specified user
Uber	2008	Travis Kalanick and Garret Camp	United States	No specified user

> meaning of information and communication technologies (ICTs). (p. 1012)

This technique aims to accurately capture the digital lives of multiply-marginalized communities. Using the application of critical theories as a lens to focus the analysis, CTDA extracts the technological artifact, the practices occurring within that technology, and the underlying cultural ideologies of that technology to develop assertions about technology and the technological practices of communities.

CTDA is a methodological “technique” that should be applied twice: once to the technological object of analysis and once to the cultural practices happening within that object (Brock, 2018, p. 1013). CTDA pairs with a range of critical theories as long as the same theory/ies are used on both analytical applications. For our purposes, we applied a DCR framework, as described by Haas (2018), to study the cultural and power relations between bodies, identities, rhetoric, and technology. While CTDA and DCR have not previously been paired, taken together, Haas’ methodological framework and Brock’s technique offered unique opportunities for critically analyzing digital interfaces, especially mobile ridesharing apps.

With our DCR-infused CTDA method, researchers and practitioners can attend to individual and collective (or community) identity with the same attentiveness afforded to technical features. This pairing encourages noticing (and centering) important cultural and community histories and practices overshadowed by talk of technological innovation. CTDA provides a systematic approach for analyzing the foci important to DCR.

In what follows, we deployed this method for a critical analysis of Uber and Lyft, which exemplify the politics of *innovative interfaces*, and a breadth of recently launched mobile ridesharing apps that exemplifies intentionally culturally specific politics. We were invested in understanding how the form, function, and cultural ideologies (key analytics in CTDA) differ when the rideshare app user is not understood as a universalized user. We organized the results using these three analytic elements applied twice, as instructed by CTDA. A notable limitation of our use of CTDA was our inability to fully capture function, as a few of these rideshare applications are defunct, have not yet launched, or operate within a region not frequently accessible to the authors.

In our first application of our DCR-infused CTDA, we focused on Uber and Lyft as applications that dominate the current rideshare market in the United States and Canada. In our second application, we focused primarily on HERide as an exemplar of culturally specific ride sharing apps that centers inclusive user experiences and engages in the hard labor of technology design that directly amplifies and addresses social justice issues. We contextualized this analysis through the mention of narratives and design features within Safr, Moovn, Go Girl Ride, and DriveHER. Our analysis explored the features and contexts of a variety of apps. However, it’s important to reiterate the current development stage of each app and highlight where we paused to analyze. HERide, Uber, and Lyft are all apps that are currently operating and available to download on mobile devices. Thus, we offered fuller analysis and insight of viewers and users. Moovn and Safr are also available to download but have shifted to different business models as companies often do. Moovn is now focused on travel and entrepreneurship in the founder’s home country of Tanzania, while Safr has shifted to medical transportation services. Thus, our analysis focused on the launch of Moovn and Safr as a Black-friendly app and a woman-only app, respectively. Finally, DriveHER and Go Girl Ride are not available for download. DriveHER is no longer operating, and Go Girl Ride is still raising funds and preparing for the launch of their app. In Table 2, we summarized our methods and findings while detailing the significance of our work in the discussion that follows.

CULTURAL IDEOLOGIES: RHETORICAL EXIGENCE AND SIGNIFICANCE

In the introduction, we highlighted discourses of technological innovation (Hutter & Lawrence, 2021) as a key cultural ideology underpinning mainstream apps like Lyft and Uber. This point is even more evident in news articles and other popular media that refer to ridesharing as “future of transit” or the “new hitchhiking” (Grush, 2017; Rossiter, 2008). We’ve highlighted the harmful drawbacks of these ideologies and, below, analyzed the discourses framing the cultural ideologies of apps like HERide and its peers. Most of these companies operate with just a sliver of the economic resources and support of their more

Table 2: Summary of CTDA on ridesharing apps

Analytic Element	First Application: Mainstream Mobile Ridesharing Apps	Second Application: Culturally Specific Mobile Ridesharing Apps	Primary Finding and/or Practitioner Takeaway
Cultural Ideologies – What are the cultural beliefs underpinning the artifact?	Mainstream apps are presented through rhetorics of innovation. As a result, these apps are contextualized as ahistorical technologies developed for a "universal" user.	Culturally specific apps are presented through rhetorics of community. Contextual discourses highlight the apps' exigencies and affordances for users marginalized by race, gender, and sexuality. Focused on access for diverse bodies.	Community-Based User Experience (CBX) must be integrated as a UX audience analysis strategy, as it more fully accounts for the histories, experiences, and accessibility of marginalized collectives.
Form – What is the form of the material artifact? How is the technological interface designed to operate?	Mainstream apps operate as a white, western aesthetic through linearity and templated form of mobile app. Interface design aligns as apps subscribe to grayscale and/or one-tone colorways and neutral iconography.	Culturally specific apps must adhere to similar linearity and templates prescribed and encoded by app developers. These apps inscribe cultural specificities through symbolic use of interface colors, icons, typography and text.	The mobile application, itself, as well as the interface of specific applications must be interrogated in UX/UI testing. Assumed neutrality yields exclusionary design.
Function – What is the nature of the discourse happening within the artifact? What are the practices happening within the artifact and how are they evident?	Mainstream apps function as transportation and delivery services. They prioritize user retention. The identities and safety of users are secondary, and sometimes tertiary, considerations.	Culturally specific apps function first as safety technologies, and second as ridesharing apps. They center user identities and build technologies around the user and community experience.	UX studies would benefit from centering features that marginalized users cite as most significant to how their identities intersect with their use of mobile apps.

mainstream counterparts, but the focal point is cultural significance as rhetorical exigence. When we conducted this analysis, the cultural ideologies underlying apps like HERide, Safr, Moovn, and Go Girl Ride centered the significance of being designed for specific cultural communities. Several of these ridesharing apps went viral online as their respective launches were amplified by news and media outlets on social media platforms. When one of HERide's co-founders announced the launch of their app on social media, users responded expressing excitement for what they deemed a necessary model of ridesharing (Anderson, 2020). TravelNoire, a popular website for the Black travel community, featured both HERide and Go Girl Ride in articles showcasing their value and importance as Black-owned companies in the rideshare industry (Peay, 2021; Taylor, 2020). Thus, the combination of news articles, rideshare app websites, and online commentary all provide insight into the ideologies underpinning these culturally specific apps.

Emphasizing safety, especially for women and LGBTQ riders, emerged as a common foundational ideology. For example, the homepage of HERide's website foregrounds a company "focused on the safety and empowerment of women" and "built with the needs of women in mind." The web copy details the rigorous background check process for drivers and highlights the security features. HERide's tagline, "Choose to be Unbothered," utilizes Black English, signaling how their safety efforts ensured desired experiences of their app's users: to be able to ride in peace and uninterrupted by being a woman or queer. HERide used this tagline in several of their promotional Instagram posts as well as website merchandise, signaling more materialized ways to support ideologies of safety. Go Girl Ride highlights a similar ideology through the vision shared on their company website:

> Go Girl Ride is working towards safety, access, innovation, and providing trauma-informed care. We seek to create spaces to meet the transportation needs of our community– women*, femmes, non-binary folks, and allies, all while ensuring that we're working from a lens that promotes a healthy society (Go Girl Ride).

Like HERide, Go Girl Ride rejects rhetorics of neutrality by explicitly positioning themselves as a culturally situated, safety-focused, and community-based ridesharing app company. With the exception of Moovn, these culturally specific apps launched with community-specific identities and initiatives in mind. For example, HERide's founders are committed to educating their drivers on identifying the signs of sex trafficking because of Atlanta's role as a hub for sex trafficking activity (Song, 2020; Taylor, 2020). HERide clearly sees drivers as a part of the community and states, "Our safety is on both ends" (Song, 2020). HERide invests in driver education and safety by providing mandatory training on assault and sex trafficking that would aim to keep drivers safe as well.

These objects of analysis clearly show cultural ideologies underpinning culturally specific ridesharing apps shaped by rhetorics of community. The developers of these apps were acutely aware of the experiences of marginalized identities in their cities, and developed technologies that seek to mitigate harm while offering a communal experience. For UX researchers and practitioners, this highlights two distinct considerations. First, evident was the importance of Community-Based User Experience (CBX) as a UX framework. Rose et al. (2017) coined and contextualized CBX through their work with a nonprofit aimed at helping U.S. immigrants navigate health insurance literature. We understand CBX as a partnership between UX researchers and community partners. Inspired by Rose et al. (2017), we posit an expansive view of CBX that understands communities as both locally situated and identity-based.

Rose et al.'s (2017) participants, Cantonese or Vietnamese-speaking immigrants in and around the Seattle, Washington area, benefited from the redesign of a health insurance guidebook originally designed to suit a more general group of immigrants who visit the health center for assistance. Similarly, apps like HERide highlight (and seeks to remedy) the shortcomings of UX's general focus on singular users instead of a collective of users. The work we've done here advocates for both UX and CBX. Capturing the experiences of individual users is not enough; we need better ways to identify community experiences so that we build and revise technologies that are equitable and just for all communities. Organizations like CMX Hub and companies like Bevy have tapped into the growth potential of the community industry from an economic perspective. However, our work highlights how culturally specific apps are ripe areas for developing CBX methods.

This work also highlights the importance of technologies built from the practices and knowledge of local transportation literacies. Like ridesharing in Zimbabwe, culturally specific technologies should prioritize the needs of local communities just as HERide's social justice-based model disrupts patterns of Atlanta-based human trafficking and Go Girl Ride's social-justice-based model incorporates trauma-informed training as a requirement for servicing Portland citizens who have been marginalized by race, gender, and sexuality. These developers are designing not just for how society currently exists, but they are designing for how it ought to be. These ideologies are critical in understanding the ingenuity in both the form and function of these apps.

Form: The APPlification of Transportation

As Brock (2018) argued, the screen, the app, and the material form, which is the mobile device in our case, can all be studied as an interface because they are mediating factors that shape user experience (p. 9). Later, Brock (2020) explained racialized applications and platforms are understudied. We follow and argue that because apps are the primary mode of accessing services through mobile technologies researchers and practitioners must consider how the mobile app itself is racialized and gendered in ways that we may not yet fully understand. With mobile services being the primary way that Black Americans access the Internet (Smith, 2010; 2015) and Black American and Hispanic usage of mobile technologies differing from white usage of these same technologies (Anderson, 2015), then we can easily draw correlation between mobile apps themselves and varied experiences that may hinge on race, gender, and other social identities.

Yet, favored mobile applications—like most technologies—were likely not developed by people who

come from the communities that use these technologies the most. Apple's earliest reports of diversity data, which began in 2014, show that over half of the employees in tech roles were white. Asians made up 23% of tech roles, and Black and Hispanic/Latinx employees in tech roles were in the single digits at 6% and 7%, respectively (Apple, "Inclusion and Diversity"). Finally, 80% of employees in tech roles in 2014 were male. While the company is now trending upward in these areas, these data highlight how mobile apps, as we know them, were coded with majority white, male, and Western epistemologies, which value normality—from the linearity on which apps are forcibly arranged on iOS devices to the templated requirements of Xcode. Therefore, the developers of apps like HERide or Moovn are already doing social justice work by insisting on centering multiply-marginalized communities even while required to build with programming and coding structures that were never designed with these communities in mind.

The mobile ridesharing app screen as interface

If the developers of culturally specific apps must work within prescribed codes and templates of whiteness, then it is the interface that allows us to understand how these developers inscribe cultural knowledge and practices. As displayed in Figure 1, one of the most obvious and clear ways that these apps highlight this difference is through their names and the visual representation of their names within the interface. Safr is clearly representative of the "safer" model of transportation the app hoped to provide for women in the Boston area, while Moovn resembles Movin, a Black English spelling of "Moving," and symbolizes what the app initially hoped to do for users whose journeys were interrupted by racial discrimination in dominant ridesharing apps. HERide's pronoun-based name is accompanied by a logo that includes a gender symbol for "female" in place of the letter "i." This logo appears on the app's loading screen and is the user's first mediating experience with the app. From the onset, the culturally specific apps offer a visual invitation to their user communities with symbols and text on the app icon. They highlight how UX researchers and practitioners can work to evade neutrality and build community ethos through first-touch interfaces, like app loading screens and icons. It is important to note that this name and design challenges what is suggested in Apple's Human Interface Guidelines. The Inclusion area of the guidelines state, "Throughout history, cultures around the world have recognized a spectrum of self-identity and expression that expands beyond the binary variants of woman and man. You can help everyone feel welcome in your app by avoiding unnecessary references to specific genders" (Apple Developer, "Inclusion"). Not only does HERide's icon design challenge this guideline, but they highlight how Apple may need to update their interface guidelines with tips for developers who want to design interfaces specifically for communities marginalized by race or gender.

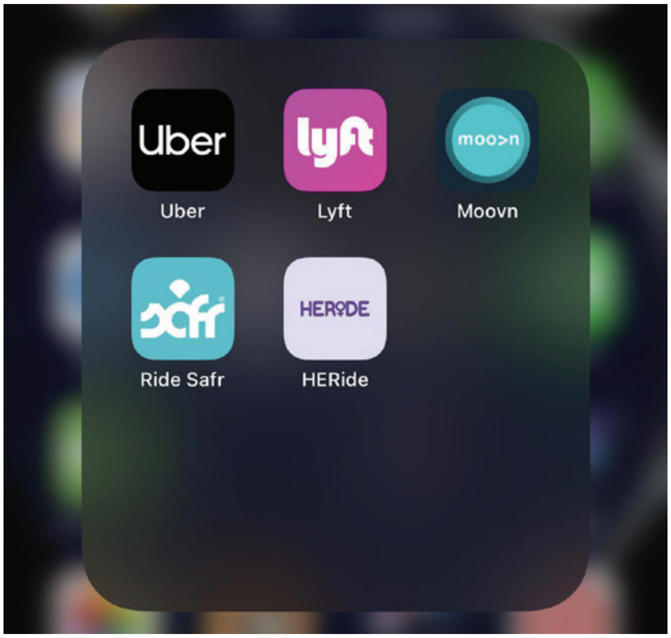

Figure 1: Ridesharing app Icons

As shown in Figure 2, Safr's initial interface icons highlight another example of inscribing community values and practices, this time within the app's operation interface. Early versions of Safr offered a rhetorical design that explicitly lent itself to perceived representations and interests of women. For example, to select the number of riders requesting a ride, the user must tap an icon that is perceivably a woman as represented by longer hair and bangs (Figure 2). Additionally, the icons include a car seat for riders to select the number of children accompanying them for the ride. The gendered icon in Safr is another element that challenges Apple's Human Interface Guidelines, as they suggest "When it's necessary to depict a generic person or people, use a nongendered human image to reinforce the message that *generic person* means *human*,

not *man* or *woman*" (Apple Developer, "Inclusion"). Apple's suggestions for neutrality here dismissed those developers who answer the exigences to develop culturally specific technologies safe for all bodies.

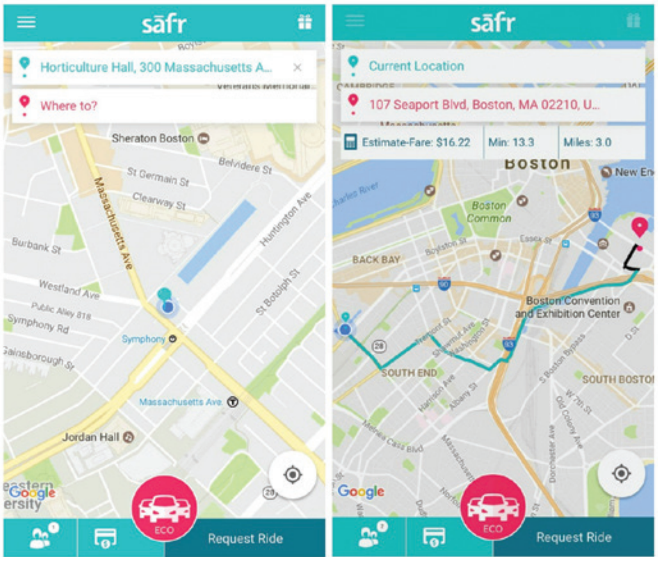

Figure 2: Safr app interface (2017)

As these apps show, the symbolic nature of the mobile app icon is an interesting point of negotiation between mainstream app developers who align closely with operating system interface guidelines and culturally specific app developers who seek to prioritize community ethos in design. Selfe and Selfe (1994) predicted such tensions when they argued that computer interfaces are political environments that can oppress just as much as they liberate. They specifically referenced personal computers, but their point is also applicable to mobile application interfaces. For example, Selfe and Selfe interrogated the design metaphor of a computer "desktop" instead of a "countertop" or "workers bench." They argue that the "desktop" and related items (like manila folders) are all indicative of a middle to upper class white-collar job (Selfe & Selfe, 1994, pp. 486–487). Thus, those who come from communities where these jobs are not normalized due to institutional oppression, are often positioned as outsiders by the design of the technology. Selfe and Selfe's disruption made room for scholars, like Brock (2020) with "navigation metaphors" (p. 43), to continue negotiating the politics of the mobile interface through elements like mobile icons.

Our analysis of mobile screen interface as form also led us to question the race and class ideologies embedded in mobile app metaphors and icons. For example, Uber, like many apps, displays an icon of a house to represent a "home" screen. Like Selfe and Selfe (1994), we questioned the metaphor of "home," but we were particularly critical of home always being represented by a stand-alone/detached house instead of other structures that people understand as home like an apartment building, townhouse, or a mobile home. Notably, the selected culturally specific apps do not include a home icon. The point here is that a focus on common, seemingly mundane, UX features help to identify, interrogate, and replace exclusionary design. Finally, the mobile ridesharing app screen is a mediating interface that goes with users to a variety of geographic locations. While the identity of the users and the features of the screen may be fixed for the moment, the screen is still mediating the user's experience with a location that might be familiar or foreign. Thus, the culturally specific apps are designed to build a bridge for users to travel, knowing that they will be met with a familiar community en route.

Function: People-first Mobile Technologies

Most of the popular ridesharing apps function as "mobile only" technologies with various economic prioritizations. Uber functions primarily as a delivery app. While Uber's initial focus was solely ridesharing, the current iteration of the app's design equally highlights icons for rides, food, groceries, or packages. The grayscale rounded squares are linear with generic icons for their delivery services (i.e., a cardboard box for a package and a basic car for a ride). Selecting the food or grocery options takes users to UberEats, which functions as a completely different app for food delivery. Here, Uber's focus is the services they provide to customers. Moreover, the lack of cultural symbolism further highlights their push for a universal user design. Uber even embraces popular design features common in social digital spaces. Uber is not a social networking site, but the "activity" section adopts social media interfaces by displaying a "feed" that highlights upcoming rides, past rides, and deliveries across all categories. The rise of social media platforms has popularized the "feed," but this is typically a feature for apps like social media with more dynamic interactions. Uber's decision to incorporate a "feed" can be read as

a way to encourage more engagement and interaction with the application as users might be interested in reviewing the data in the way one might go back and read social media posts.

While Uber works to be all things to all people, Lyft focuses more on driving, riding, and transportation. The app's bottom menu landing page focuses on four categories: rides with Lyft drivers, public transportation, rental cars, and user's personal car information. Lyft's side menu icons offer options to refer a friend, purchase gift cards, and connect rewards from corporate partners. Essentially, this additional menu functions as a tool for user and driver recruitment and rider retention. Aside from the "donate" page, which offers riders an opportunity to round up the cost of their rides to a local charity, Lyft's design is focused on keeping riders within the ecosystem of Lyft's transportation services, whether it's with Lyft riders directly or connecting to third party transportation services and public transportation through the app.

The functions of neutrality are glaring within these apps. Outside of the option for users to upload profile images (likely so that users can identify each other), there are no discernable features that are reflective of cultural specificity, cultural competence, or cultural sustainability. Though one could (and probably will) argue that this is not necessary, our aforementioned discussion on the issues Uber and Lyft have had with racism and sexual assault suggest otherwise. Furthermore, Haas (2018) stated, "Thus, common questions asked by digital cultural rhetoricians ask: Whose bodies are visible in digital spaces? For whom are visible digital bodies a risk? Which technologies are empowering for whom? Democratizing for which communities, cultures, and languages?" (p. 416). It is the race to neutrality that further problematizes and strains Lyft and Uber's relationship with marginalized and multiply marginalized users and their bodies. On the other hand, it is this race to neutrality driving the exigence for apps like HERide, Safr, Moovn, and Go Girl Ride.

Scholars have highlighted how marginalized groups continuously press against, into, and beyond digital form to ensure that applications function for their purposes and allow fuller expressions of identity (Kynard 2007; Arola, 2017; Rose et al, 2018). The developers of culturally specific apps follow suit in their app functions and development. For example, we saw HERide's cultural ideology as a community-centered app through the user's first interactions upon download. The launch screens highlight app logistics but also highlights a feature that allows users to share their ride details with family and friends. HERide also emphasizes two ways to use the app for transportation, which includes booking immediately or pre-booking a ride. Finally, the app's side menu offers unique options like selecting favorite drivers. This is in direct contrast to Lyft and Uber's randomized match system between drivers and those requesting rides. HERide also includes a section for emergency contacts, which further highlights the developers' understanding of the ridesharing experiences of individuals marginalized by race and gender. Within Uber and Lyft, these reporting features take a few too many taps to access versus the two required in HERide.

Haas (2018) explained, "Indeed, theorizing complex relationships between old(er) and new(er) technologies in rhetorically and culturally situated ways can afford unique disciplinary insights and revise previously held assumptions about technology toward more culturally inclusive understandings of digital rhetorics that are also responsive to community needs" (p. 415). Although Uber and Lyft may not be viewed as "older" technologies, there is a 13-year difference between the launch of their platforms and HERide. Technology has shifted drastically

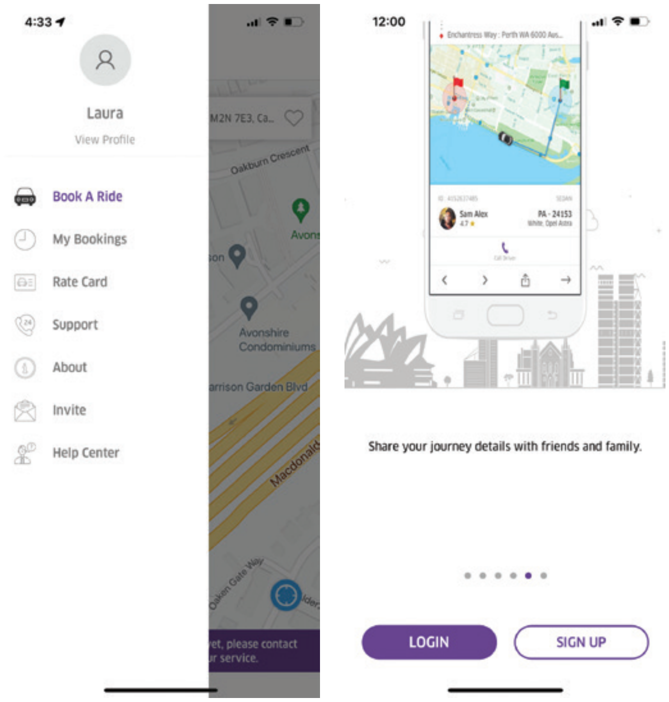

Figure 3: HERide launch screen and menu interface

within this time and HERide is a representation of technologies that are responsive to the needs of users. HERide shows how culturally specific apps function first as safety technologies, and second as ridesharing apps. They center user identities and build technologies around the user and community experience.

CONCLUSION

As shown throughout this article, mobile ridesharing apps are sites where digital interfaces, cultural practices, and rhetorical discourses intersect and are engaged. In order to continue, or start, designing equitable technological experiences for all users—and particularly those who are marginalized—rhetoric, technical communication, and UX researchers and practitioners must be attentive to cultural nuances. We highlight how Haas's (2018) Digital Cultural Rhetorics (DCR), especially when paired with Brock's Critical Technocultural Discourse Analysis (CTDA), offers methodological frameworks for unpacking culture and user experience while exposing design approaches that assume cultural neutrality and one-dimensional use. Further, these approaches uncover discourses of technological innovation that often render invisible the histories and culturally specific practices mediated through specific mobile ridesharing apps and their respective cultural ideologies, forms, and functions.

Researcher and Practitioner Takeaways

While developing a checklist for remedying the bias inherent in mobile apps and ridesharing interfaces is tempting, we believe solutions lie in mindset shifts that allow user experience (UX) researchers and practitioners engagement with more boutique approaches through community-based user experience (CBX). We understand CBX research as working with community partners, as exemplified by Rose et al. (2017), and note the importance of broadening community to account for how those marginalized by dominant ideologies collectively navigate the world as mediated by technologies. For example, HERide understands their community of users as women living in the Atlanta area, thus vulnerable to the issue of human sex-trafficking prevalent in the city. Both training materials and technical interface features are designed to help all users (riders and drivers) mitigate this problem. HERide's culturally specific approach to the ridesharing application more directly helps to solve a problem while mainstream apps like Uber and Lyft continue to struggle in this area. To aid UX researchers and practitioners in implementing CBX and culturally specific approaches to designing mobile apps and other digital interfaces, we conclude with some preliminary researcher and practitioner takeaways:

1. **Interrogate technological origins through counter-histories:** Research design must be informed by the global histories of cultural technologies and design approaches in marginalized, non-Western communities. Importantly, the goal is not to invert dominant narratives but rather understand what underpins such ideologies.
2. **Analyze software and screen as interface:** The interrogation of the mobile application, itself, as well as the interfaces of specific applications must remain central to the work of UX/UI texting. Assumed neutrality yields exclusionary design, and the thin glass that bridges user and technology is never neutral.
3. **Center marginalized community partners**: Expand community partners to include collectives marginalized as a form of social justice (Rose et al., 2018). These communities must be defined and integrated as a UX audience analysis strategy to more fully account for histories, experiences, and accessibility.
4. **Community-Based User Experience (CBX)** studies would benefit from centering features that marginalized users cite as most significant to how their identities intersect with their use of mobile apps.

As technological practices continue to rapidly evolve, especially with the growth of artificial intelligence integration, we call for further research into how mobile ridesharing app developers can implement a CBX and avoid the allure of launching the newest *innovative interface*. This work, as we argued, will not simply be about the way an app hails a ride for a user or how a driver receives a ride request but rather requires developers to learn and honor the histories, practices, places, and embodied needs of the communities they hope to serve. Further, developers, users, researchers, and practitioners should not position this work within the discourses of technological innovation but rather embrace how mobile ridesharing apps designed with culturally specific knowledge are continuations of the long-held cultural practices that move us in and through the world.

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Applied Research

Reporting Online Aggression: A Transnational Comparative Interface Analysis of Sina Weibo and Twitter

doi.org/10.55177/tc934647

By Chen Chen and Xiaobo Wang

ABSTRACT

Purpose: This study investigates Sina Weibo's and Twitter's reporting interfaces from the perspective of transnational, multilingual users whose experiences challenge mononational and monocultural technology designs. Using two cases of online aggression, we analyze how these interfaces marginalize transnational feminist users. The purpose of this project is to call for social justice-oriented interface design that can better support transnational users on global social media platforms.

Method: Drawing from comparative rhetorical studies, critical interface analysis, and virtue ethics, we develop a social justice-oriented comparative critical framework for interface analysis. We then apply this framework to our experiences reporting aggression on Sina Weibo and Twitter through two case studies.

Results: In both cases (one in the forms of direct attacks or misinformation against women and feminists, due to attacks on feminists in China and another on women's reproductive rights in the US), we find that Weibo and Twitter offer limited options for us to report online aggression toward transnational feminist users. Both platforms designed their reporting interfaces with the aim of efficiency that reduces complexities of how one might interpret the violation categories on the interfaces. But for transnational users who report such attacks in a cross-cultural context, the cultural or social values imparted from the interface may not acknowledge the complexity of their experiences.

Conclusion: The scanty reporting options on both platforms show the limitations of monocultural and monolingual design of such interfaces as well as the nation-based policies of these platforms.

Keywords: Reporting Online Aggression; Comparative Critical Interface Analysis; Weibo; Twitter; Transnational; Feminist

Practitioner's Takeaway:

We offer some suggestions for interface designers to better support transnational users, especially for reporting interfaces:

- including multiple languages on the interface;
- making the reporting mechanisms more apparent;
- providing opportunities for users to reflect on what value systems drive their reporting decisions;
- giving users options within the reporting interface to directly challenge or give feedback on the options/ policies provided on the interface, granting them more agency; and
- developing more appropriate policies and operational interfaces that encourage, rather than limit, users' ability to engage their political rights.

The impetus of this project came from the authors' experiences as Chinese scholars living in the United States who have witnessed or experienced online aggression in the forms of direct attacks or misinformation against women and feminists due to attacks on feminists in China (Xiao, 2021) and on women's reproductive rights in the US (Totenberg & McCammon, 2022). As transnational, multilingual users of social media platforms from both China and the US, operating in the "borderlands" (Mao, 2006) of the "liminal space" (Sun, 2020), we have become weary of the increasingly toxic online environments in both countries. When engaging with transnational politics in these spaces, we're frustrated with the lack of consideration for complex transnational positionalities in the design of these technologies, especially in their reporting features for purportedly addressing such aggressions. As our study on China's Sina Weibo and U.S.'s Twitter (two microblogging technologies) later shows, these platforms are often designed based on the cultural and legal parameters of its home country and dominant political and cultural values.

Situated in scholarly conversations on the rhetorics and ethics of social media platforms and interfaces and human-centered, cross-cultural technology design, we investigate Weibo's and Twitter's reporting interfaces from the perspective of transnational, multilingual users whose experiences challenge mononational and monocultural technology designs. This article aims to answer these questions:

- How can we perform critical interface analyses in transnational and cross-cultural contexts?
- How can the interface design of microblogging technology reporting features contribute to the continued oppression of marginalized transnational and transcultural users (such as women and feminists)?
- How can we better design interfaces for social justice with transnational users in mind? In other words, how can designers account for different and possibly competing cultural values that may emerge as transnational and transcultural users engage with their technologies?

Digital rhetorical studies have been examining technologies and platforms critically and rhetorically, not as value-neutral tools (Selfe & Selfe, 1994; Arola, 2010; Brown, 2015; Holmes, 2016; Walton et al., 2019). As Edwards and Gelms (2018) argued, "Platforms grant access, but they also set the conditions for that access. Platforms promise to be catalysts for public participation, but they also mask their role in facilitating or occluding that participation. Platforms make decisions, but they often downplay, obfuscate, and/or black box those decisions" (para. 3). This blackboxing is especially problematic when it comes to processing violations and aggressions, particularly when platforms hold little responsibility to address abusive and harassing behaviors (Brown & Hennis, 2020).

Rhetorical, critical, and ethical approaches to interface analysis and design require that we not only see the interface as a place of technological, social, and cultural interaction (Carnegie, 2009) but also as a meaning-making site itself (Sano-Franchini, 2018). Thus, interfaces materialize this blackboxing in moments of user interactions (Sun & Davidson, 2014). Therefore, digital rhetoric and platform studies scholars argued for solutions that speak to policy development regarding content moderation that raises the accountability of platforms, in order to protect users against online aggression (Gillespie, 2018; Reyman & Sparby, 2020; Trice et al., 2020).

Refuting the neutrality of platforms allows technical communication researchers to pay critical attention to how values are embedded in technological features and functions, and to question the design of interactions afforded by interfaces which reflect a platform's ethos, identity, and thus shapes user experiences, not only in terms of its appearances but also its technological functions as afforded by the interface (Sparby, 2017; Sano-Franchini, 2018; Gallagher, 2020). Sano-Franchini's (2018) critical interface analysis focused on users' embodied experiences when interacting with an interface over time. She then provided a list of questions for UX practitioners to consider so that they can be more mindful of how UX design can "potentially uphold and/or undermine citizen voices, public deliberation, and equal access and opportunity, especially considering the political use of platforms such as Facebook" (p. 402). We are interested in what this might look like in cross-cultural and transnational contexts.

Technical and Professional Communication (TPC) scholars have drawn on interdisciplinary approaches to examine cross-cultural technology design (Sun, 2012; Sano-Franchini, 2017; Wang & Gu, 2015, 2022; Gu & Yu, 2016), which developed tools for us to examine how values are imparted from technological artifacts and

how cultural, political relationships or social structures can emerge in technology use (Orlikowski, 2000). To account for power differences in this design work, extending work from critical design in human-computer interaction (HCI) studies (Bardzell et al., 2012), Sun (2020) argued for a critical and relational examination of how micro interactions in users' everyday lives are influenced by macro institutional structures that may be designed with the more dominant western/Global North epistemologies. Sun's (2020) "practice-theoretic approach" focuses on "engaging with and transforming the world through embodied activity, mediated by artifacts, based on shared understanding" (p. 39), treating "practice as the unit of analysis and design intervention" and "a more engaged interaction between human and technology through an integrative perspective" (p. 43). This aligns with values of human-centered design (HCD) with social justice aims (Dombrowski et al., 2016; Jones, 2016; Costanza-Chock, 2020) that consider how communication design can enact injustices and how we can amplify and center the experiences and practices of those who are economically, culturally, socially, and politically disadvantaged (Walton et al., 2019).

Like Sun, we posit that not only should we examine and practice localized design of technologies, but we should also learn about how global users engage with technologies, not only from their home cultures but also their adopted cultures. For example, given increasing tensions between China and the US, transnational social media users like us often need to navigate online spaces where anti-feminist values manifest in tandem with competing nationalist values in different ways. In this article, we develop a social justice-oriented comparative critical framework for interface analysis that accounts for cross-cultural and transnational experiences and the broader impacts of our digital experiences for a technomoral future (Vallor, 2013). Then, we apply this framework to the analysis of the reporting features on Weibo and Twitter. We conclude with some discussion of the implications of this research.

A SOCIAL JUSTICE-ORIENTED COMPARATIVE CRITICAL FRAMEWORK FOR INTERFACE ANALYSIS

Comparative rhetoric studies focus on how we can represent the "other" so that the other does not lose its own otherness or that such representation does not turn out to be "useful" only to the Euro-American West, thus inviting global, transnational perspectives that challenge the Euro-America-Centric paradigm (Mao et al., 2015). Therefore, comparative methodology is ontological and epistemic (Mao et al., 2015), which requires researchers to engage in the "art of recontextualization," "informed by an outright rejection of any external principle or overarching context to determine the context of the other, and it further relies on terms of interdependence and interconnectivity to constitute and regulate representation of all discursive practices" (Mao, 2013, p. 218). For interface analyses, this means recognizing that transnational users' interpretation of and engagement with the interface necessarily enacts a recontextualization where the cultural context of the interface encounters the cultural context of users.

Sano-Franchini (2018) defined critical interface analysis as "the meaning-making function of the site that blends theory, critique, and reflection on embodied experience in a recursive fashion, understanding that the relationship across the three can lead to an intentionally reflexive critical approach" (p. 391). In particular, this method pays attention to users' affective, cultural experiences when interacting with an interface. To answer her question: "What kind of society do we want to live in?" (p. 403). We bring a virtue ethics approach to further help us understand how affordances of an interface may shape user behaviors and dispositions (Gallagher, 2020).

A rhetorical virtue ethics approach to interface analysis asks that we pay attention to how interfaces encourage different kinds of ethical commitments from users. Drawing from three virtue ethics traditions, Vallor (2013) developed a technomoral framework that pays attention to the "social context of concrete roles, relationships, and responsibilities to others" surrounding technologies, with a focus on moral self-cultivation (p. 33). To add a rhetorical dimension to Vallor's conception of virtue ethics, Colton and Holmes (2018) argued for contextualizing virtue ethics through habitual development (hexis). *Hexis* is defined as "the disposition, state, or bodily comportment of a person brought about by the development of habits" (p. 32). In other words, how might a user's interaction with an interface cultivate certain ethical commitments? Answering these questions naturally requires considering cultural contexts.

Finally, we argue that this framework must be social justice-oriented, because cultivating virtues in

cross-cultural contexts requires us to consider how transnational users may be marginalized. Walton et al. (2019) used Young's theory of "faces of oppression" to interrogate ways that TPC practices can enact oppression, including marginalization, cultural imperialism, powerlessness, exploitation, and violence. Marginalization excludes particular groups from meaningful participation in society. For comparative interface analysis, we ask: How are the interfaces marginalizing transnational, multilingual users? Cultural imperialism occludes the perspectives of the oppressed groups and sets up a dominant culture as a norm by which other cultures are judged and found lacking. For comparative interface analysis, we ask, How does the interface reproduce colonial, imperial values, while erasing cultural values from historically marginalized groups? Further, people experience powerlessness when they lack autonomy and authority. When an interface actively marginalizes certain users, it can render them powerless when interacting with the interface.

Marginalization, cultural imperialism, and powerlessness can lead to violence, including physical and psychological attacks and/or threats, as well as the reliving and witnessing of violence and violent acts that harm people's bodies, minds, and possessions. For comparative interface analysis, we might ask: How does an interface facilitate violence toward transnational, multilingual users? Finally, exploitation can be understood as material and labor exploitations of people of color. In digital contexts, we can also see exploitation as exploiting users by profiting from user engagement and data on a platform (Jarrett, 2018). For interface analysis, we ask: How does an interface impart a platform's assumptions about global users' labor and data in transnational spaces? Finally, we must also pay attention to how these faces of oppressions can intersectionally (Crenshaw, 1991) manifest in cross-cultural interface interactions.

Bringing these theoretical and methodological approaches together, we adopt a comparative critical interface analysis framework with a social justice-orientation and an attention toward how interface design can cultivate different ethical dispositions that may contribute to or redress faces of oppression, particularly for transnational, multilingual users. Our framework operates with the base assumptions of Sano-Franchini's (2018) critical interface analysis methodology, paying attention to not only the features and functions of the interface but also "the ideological and cultural values and assumptions imparted through the interface" (p. 391). When considering the affordances and limitations of the interface and use, she argued that we should also consider the user environment, and embodied experiences and emotions so we can unpack the "memories, literacies, and histories" the interface relies on, which can benefit some users but exclude others" (pp. 391–392). We further extend this heuristic by drawing attention to transnational users' complex positionalities and making more explicit a social justice orientation to identify how transnational users may be excluded by an interface design. Our rhetorical use of virtue ethics also extends a relational understanding of how the interface cultivates virtues or vices in transnational contexts (Colton & Holmes, 2018; Vallor, 2013). Thus, we employ the following heuristic questions in addition to Sano-Franchini's method (2018):

- How do the ideological and cultural values imparted by the interface interact with the cultural and ideological values of transnational users?
- How do transnational users navigate these competing values? What kinds of affective experiences may they have? What dispositions and deliberations are facilitated by the interface and how do they impact transnational users?
- How does the interface empower or fail users through cultivating virtues or vices (hexis) in transnational contexts?
- How does the interface reproduce colonial, imperial values, while erasing cultural values from historically marginalized groups through its design? How does the interface facilitate online aggression and violence toward transnational, multilingual users?
- How does the interface impart a platform's assumptions about these users' labor and data in transnational spaces?

To apply these heuristic questions, our framework requires us to traverse cultural contexts by first analyzing cultural values embedded in the interface design from culture A (see Figure 1), and then by interpreting those values from the perspective of transnational users who also embody values of culture B. This process of recontextualization may reveal tensions between the values of the interface that are more monocultural and nationalistic and the values of transnational users which

are perhaps more multitude. It's also important to note that while we use culture A and B in the framework, it doesn't mean that we take a monocultural view of a nation but to simply indicate the cross-cultural traverse. A transcultural user from any given country can easily identify additional cultural values they embody that may clash with values of the dominant, national, and cultural values of the interface. While this is presented as a linear process, the analysis is iterative.

FINDINGS

Our analysis focuses primarily on how Twitter's and Weibo's* reporting interfaces handle two types of aggressions: direct (personal) aggression and value-driven misinformation, which we have experienced and observed as users of both platforms. In each case, we present an issue related to feminists and women's rights that has traversed across from one country to the other, reflecting cultural and ideological tensions. Given how fast social media technologies change their features, the interfaces we examined here were collected from April 2021 to January 2023. In applying our framework, we start by describing the features on the interface, including the options of violences that can be reported and how we navigated those options given our positionality as transnational feminist users, focusing on the first four bullets of the questions of the framework. We identify how the cultural and ideological values imparted from one interface clashed with our cross-cultural and ideological values as transnational feminist users, thus limiting the deliberative acts afforded by the reporting options, impacting our affective experiences. For our cases, we contextualize this interpretation in the feminist discourses in the two national contexts, noting how users interacted with one platform and then the other around the same case. In this process, we identify how neither platform fully accounts for the values that transnational feminist users like us embody. Ultimately, we illustrate how these interfaces may cultivate certain ethical commitments, such as expediency, and political ideologies that lead to the oppression of transnational feminist users.

Case 1: Reporting direct aggression

In 2021, Chinese feminist activist Xiao Meili posted a viral video on Weibo, showing a smoking man attacking

* *We are using the English version of Weibo in this article to see if and how Weibo translates its interface. Most features on the interfaces are not translated into English, as our examples show.*

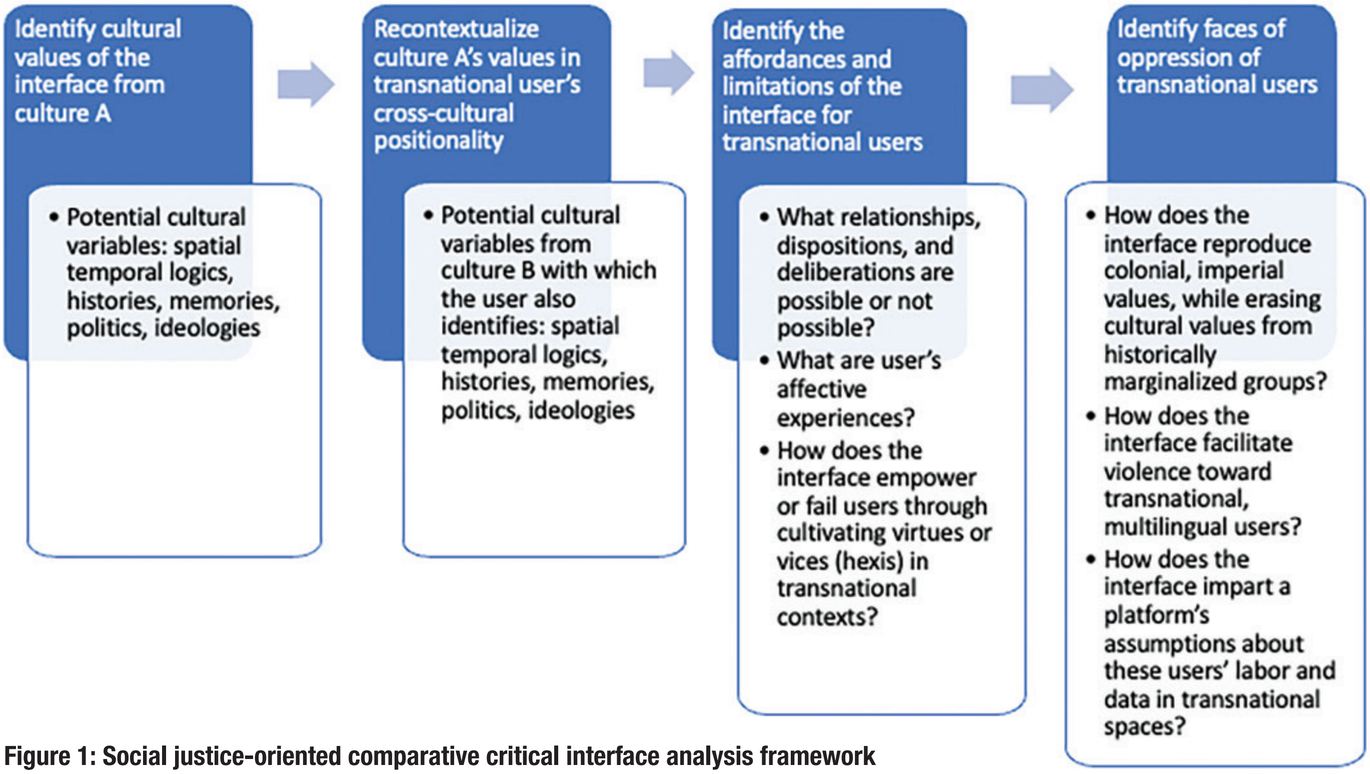

Figure 1: Social justice-oriented comparative critical interface analysis framework

her and her friends when they asked him to put out the cigarette, yelling gender-based slurs. The initial wave of online support for Xiao quickly turned when some Weibo users pointed out that Xiao is a "feminist" and then wrongly accused her of being a supporter of Hong Kong independence, "a nation's traitor" influenced by "foreign forces," ultimately leading to Weibo deleting Xiao's account (Xiao, 2021). While we don't have the space to delve deeper into this complex and controversial discourse around feminisms on Weibo here (Chen & Wang, 2022; Huang, 2022), many Chinese Internet users see "feminism" and "feminists" as terms and ideas imported from the West. Combined with the increasing nationalistic and an anti-"foreign forces" discourse in Chinese digital spaces, many users equate feminists with "foreign forces" that must be condemned.

When having joined an online campaign to support Xiao, Chen received multiple comments attacking her as a feminist and a national traitor influenced by "foreign forces." In this case, we share how Chen navigated the reporting interfaces when "complaining" about a comment made to her. The English version of Weibo uses "complain" rather than "report" because the original Chinese term 举报 has a more punitive connotation than the more neutral tone of "reporting."

On Weibo, while the general "complain" interfaces look fairly similar for different types of content (posts, comments, users), violation options available for each type of content may not be the same. When complaining about a comment on her post ("no wonder you are located in the U.S."), Chen had to choose the type of violation and then "the specific reasons" for the complaint both on the same interface. Here, Chen considered this accusation as a personal attack given that her post was only supporting Xiao Meili, and not "colluding with foreign forces." However, what is labeled as "specific reasons" under "personal attack" are means of attacks not "reasons" as labeled (see Figure 2).

While further explanations are provided for some violation types, the user is not given time or space in one interface to ponder on the meanings or implications of these options or question these categories through direct engagement with Weibo, emphasizing an ethics of expediency (Katz, 1992). Therefore, a user is encouraged to make a quick decision and submit the complaint and wait for a response from Weibo, often simply a confirmation message with zero follow-up, or suggesting to "blacklist" a user so they will no longer see that person's posts or comments.

Figure 2: Weibo complain interface for complaining about a comment highlighting specific reasons under the option "personal attack"

More problematic is the way violations are defined, categorized, and framed, particularly for transnational users. This is perhaps why Chen's complaint may never contribute to improving the toxic, nationalistic, patriarchal affective economy on Weibo (Huang, 2022), regardless of which violation type she chooses. For example, it's hard to decide whether it's better to choose "personal attacks" or "online violence" to label the aggression she received. Instrumentally, the option "personal attacks" affords users to report anyone who has attacked them personally. But socially, what counts as "attack" reflects Chinese cultural and political values. Then, under "personal attack," it can be hard to choose a reason, especially when a nationalist comment can embody all three options—unkind discourse, insult and hurl abuse, and promote hate and discrimination—yet only one option is allowed.

From a virtue ethics perspective, we may see such an interface as not facilitating a relational understanding.

When defining relational understanding, Vallor (2013) drew from Mengzi who argued that "blind, unthinking conformity to the conventional social order" (p. 81) is not beneficial as it fails to contextualize human relationships. Although the comment itself doesn't have explicit insulting or hateful language, contextualizing it in Weibo's anti-feminist affective economy can reveal the nationalistic logic behind it that is insulting and hateful. Ultimately, Chen chose "unkind discourse" due to the mild language of the comment, yet she could also see it as "promoting hate."

"Promote hate and discrimination" also doesn't recognize that some groups are unjustly targeted, e.g., women and feminists. When Xiao's case broke out in April 2021, Weibo's interface did actually have a violation type of "gender-based discrimination" under the category of "promoting hate" (see Figure 3). That option was no longer there soon after Xiao's account was deleted on the platform. Rather, it includes "promoting hate and discrimination" as a reason for personal attacks, thus reducing a social problem to the individual level. This change further marginalizes transnational feminist users like Chen, because it no longer recognizes the anti-feminist and nationalistic nature underpinning such attacks, rendering users powerless.

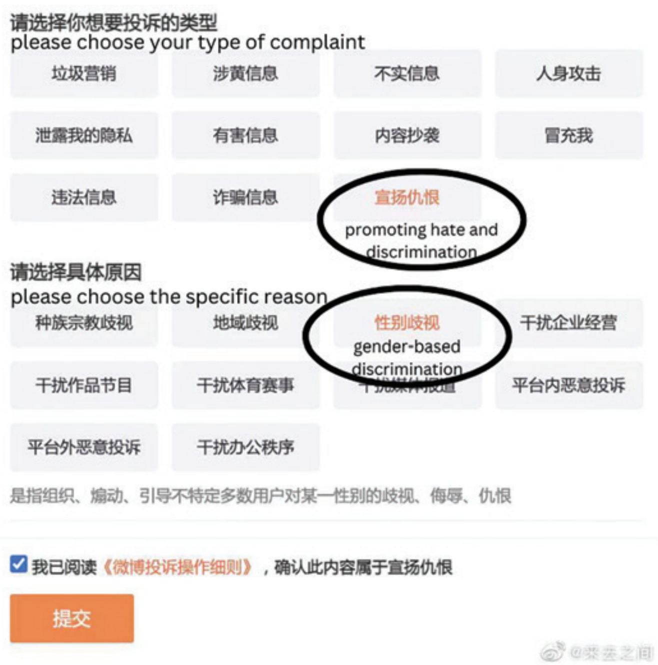

Figure 3: An image posted by the Weibo CEO shortly after Xiao Meili's incident in April 2021 that shows "gender discrimination" as reason for the violation type "promoting hate"

Like many Chinese sociopolitical events, Xiao's case also traveled to Twitter where overseas Chinese nationalists continued to attack her and the Chinese feminist movement. On Twitter, one can report an account if the profile information has abusive content, or tweets that have enacted or threatened violence. While, on Weibo, users only have the option to label the type of attack, Twitter's interface lets users first identify who this report is for, what happened, and then identify the means through which it happened, separating the nature of the violence from the acts of violence, then finally validate the report by identifying the specific type of violation (see Figures 4, 5). When the attack is identity based, users are further asked to verify the specifics of the attack. Because users have to traverse across interfaces rather than staying in one as on Weibo, it arguably does a better job at cultivating relational understanding and prudential judgment, with more friction in the process of reporting to help users pause and deliberate over their decisions before submitting a report.

Yet, the types of direct aggressions still reflect limited cross-cultural understandings that can prove inadequate when the reported content involves issues from non-English countries and cultures. In this case, Chen tried to report a Chinese tweet that directly attacked Xiao Meili for "到处操作拉帮结派 搞男女对立 暗中支持西方MeToo反动组织" ("operationalizing collusion everywhere to promote man vs. woman opposition, secretly supporting western reactionary organization MeToo"). The tweet could be seen as a direct attack on Xiao based on her identity as a feminist, or spreading misleading information as MeToo is not an organization nor is it necessarily reactionary against the Chinese political system. However, as the tweet was directly accusing Xiao of colluding with the so called "Western forces," Chen chose to report this as an attack on Xiao's identity, wrongfully purporting that she is a traitor to her country.

It's more difficult to label the "how" of this act, as the options on Twitter don't account for the complexity of China's socio-political situation. We might select any of the options including "harmful tropes;" "wishing them harm;" "spreading fear about them because of their identity;" and "encouraging others to harass them because of their identity" even though the language may not explicitly reflect these. But for transnational feminist users like Chen, none of these most accurately capture why this post can be seen as an attack on Xiao's

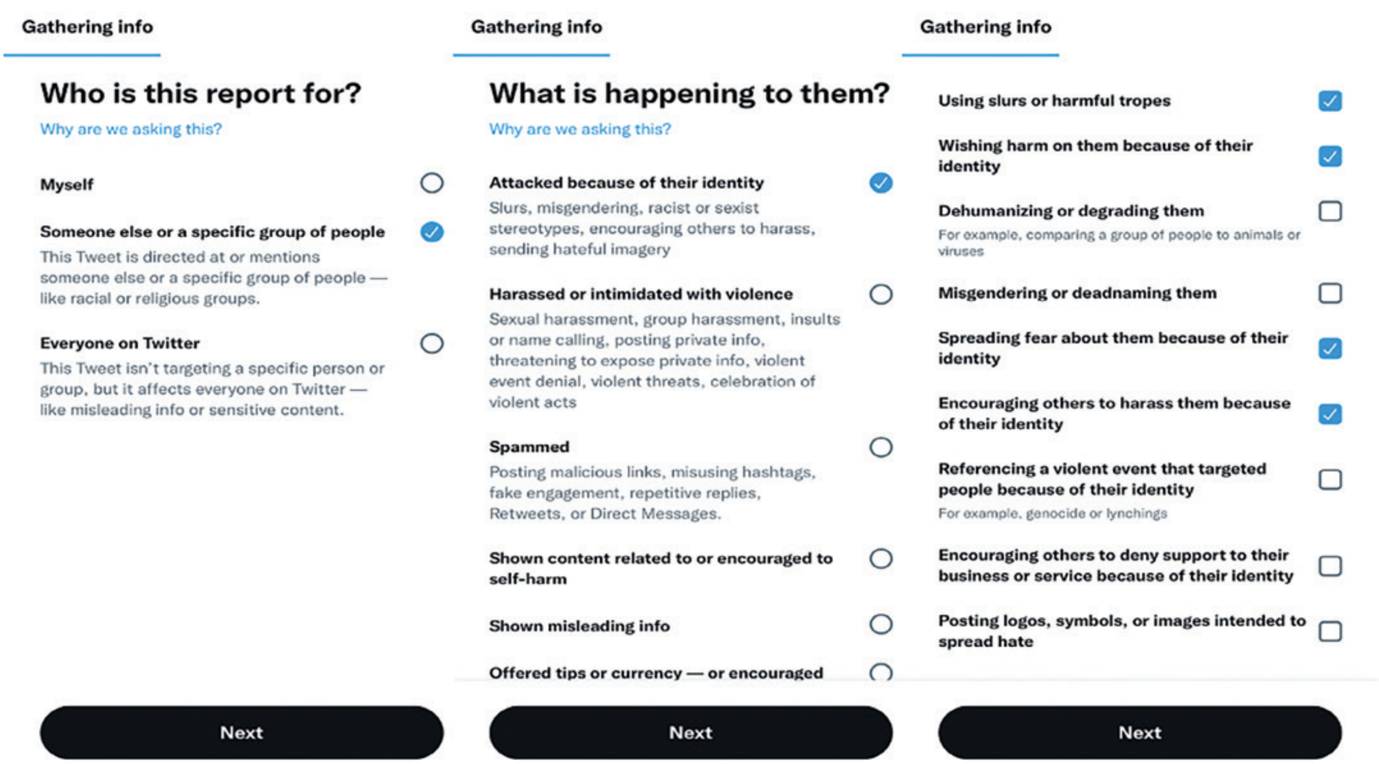

Figure 4: Screenshots of Twitter reporting interfaces when choosing the options of "attacked because of their identity" for "someone else or a specific group of people"

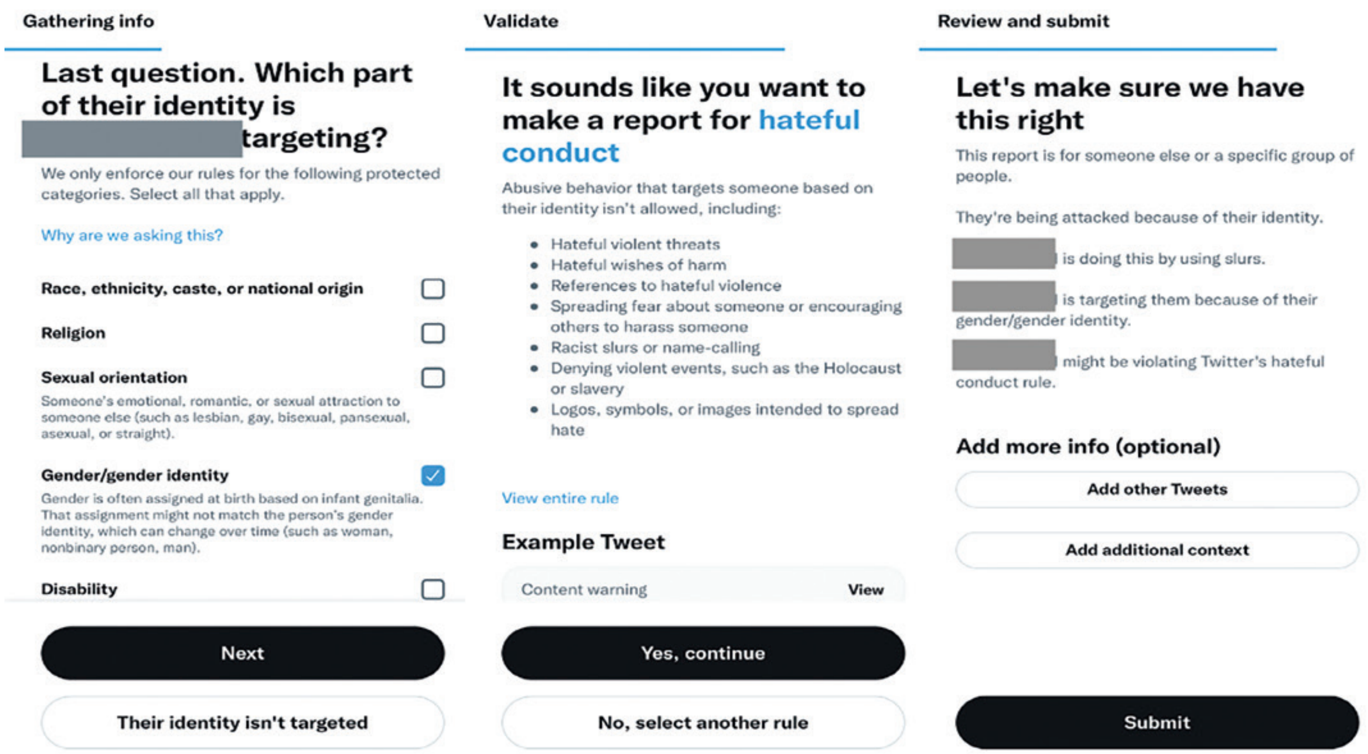

Figure 5: Further steps of Twitter reporting process interfaces continued from Figure 4

identity due to the Chinese nationalist ideological construct of feminism.

It's clear that both platforms recognize identity-based direct aggression or attacks on individuals or groups of people. But for transnational users who report such attacks in a cross-cultural context, the cultural or social values imparted from the interface may not acknowledge the complexity of their experiences. For example, discrimination and hate on Weibo no longer accounts for specific marginalized groups such as feminists, while on Twitter "identity attacks" doesn't explicitly account for how the attack on someone's identity can be based on political values that are rooted in the values, ideologies, and norms of a different country.

Figure 6: A tweet using visual and textual arguments against feminist slogan "My Body, My Choice" by equating abortion with "killing babies"

Case 2: Reporting Misleading Information

Case two presents Xiaobo's user experience on Twitter and Weibo while reporting comments or users against women's reproductive rights. On June 24, 2022, the U.S. Supreme Court officially reversed Roe v. Wade, ending the constitutional right to abortion that had been upheld for nearly a half century (Totenberg & McCammon, 2022). This case reflects, particularly, the failures of reporting value-driven misinformation on both Twitter and Weibo. Here, by "value-driven," we mean the kind of information that is often driven by particular religious or political views, such as conservative vs. liberal, especially on women's reproductive rights, that is not scientifically sound but difficult to argue against with only scientific evidence.

On Twitter, Xiaobo tried to report a post reflecting conservative Christian values (see Figure 6). When reporting, she found the interface is too vague or too general, not accounting for social and political controversies (see Figure 7).

As shown in Figure 7, reporting categories "Attacked because of their identity," "Harassed or intimidated with violence," "Shown sensitive or disturbing content," and "Shown misleading info" all seem relevant to the case. The tweet can certainly make users who support abortion rights feel attacked due to their identities, because the post suggests the equivalence between choosing abortion or supporting abortion and a "baby killing" crime. "Shown sensitive or disturbing content" is also relevant because the images and texts describe baby killing and babies' bodies within the womb. Yet, the real problem of the tweet is the value behind it, enacting intersectional oppression to those who have no power to change the new law, who don't have money to travel out of their states to get a surgery, and those who have to relive violent experiences such as rape or incest.

As this tweet is presenting a misleading argument, Xiaobo clicked "misleading info" to see what the next step is for users to choose, but she found only two sub-categories available: misleading information related to the COVID-19 pandemic or the election process (see Figure 8), neither is applicable. Users then would have to go all the way back to the beginning of the reporting interface to try out other options. This implies that Twitter consents anti-feminist or anti-women discourses despite its policy condemning gender-based violations.

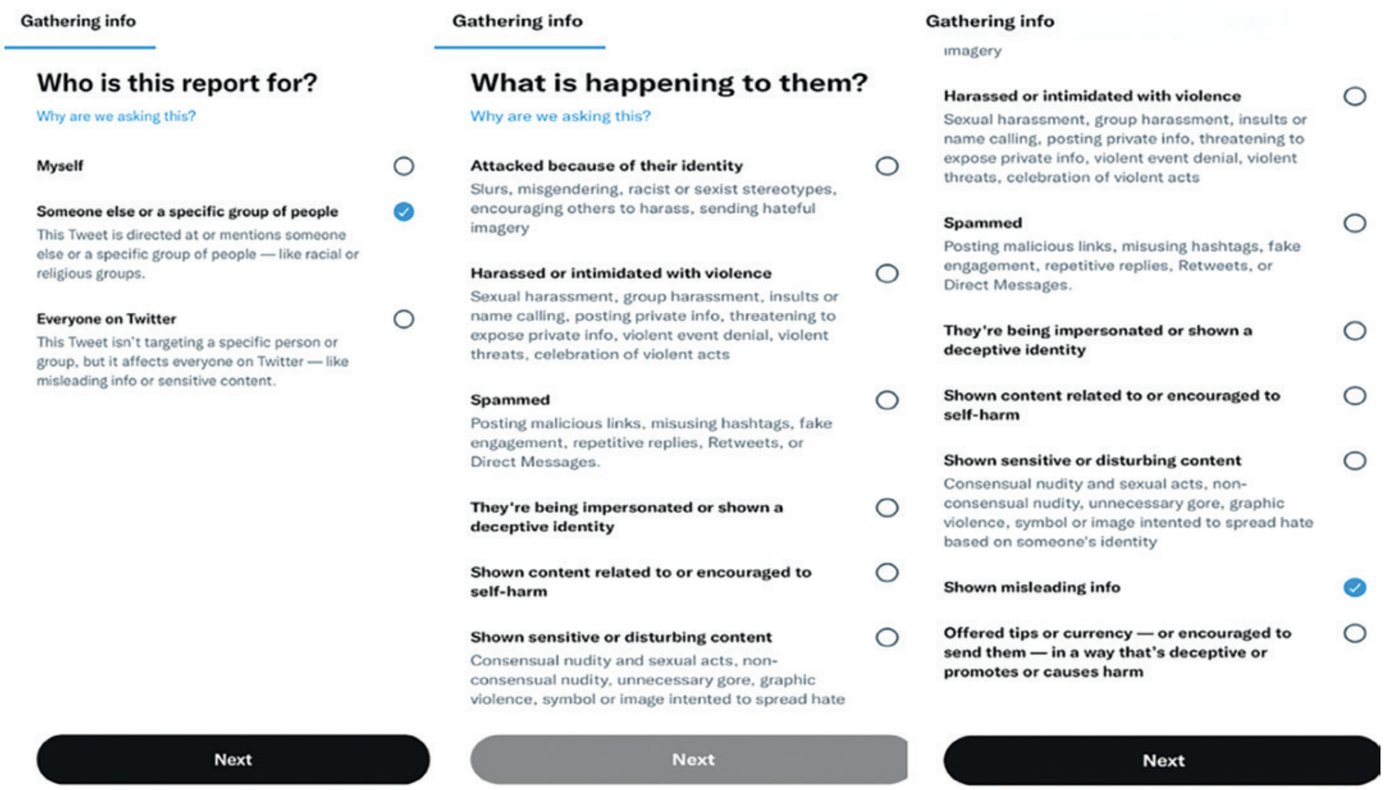

Figure 7: Reporting Interface on Twitter for misleading information

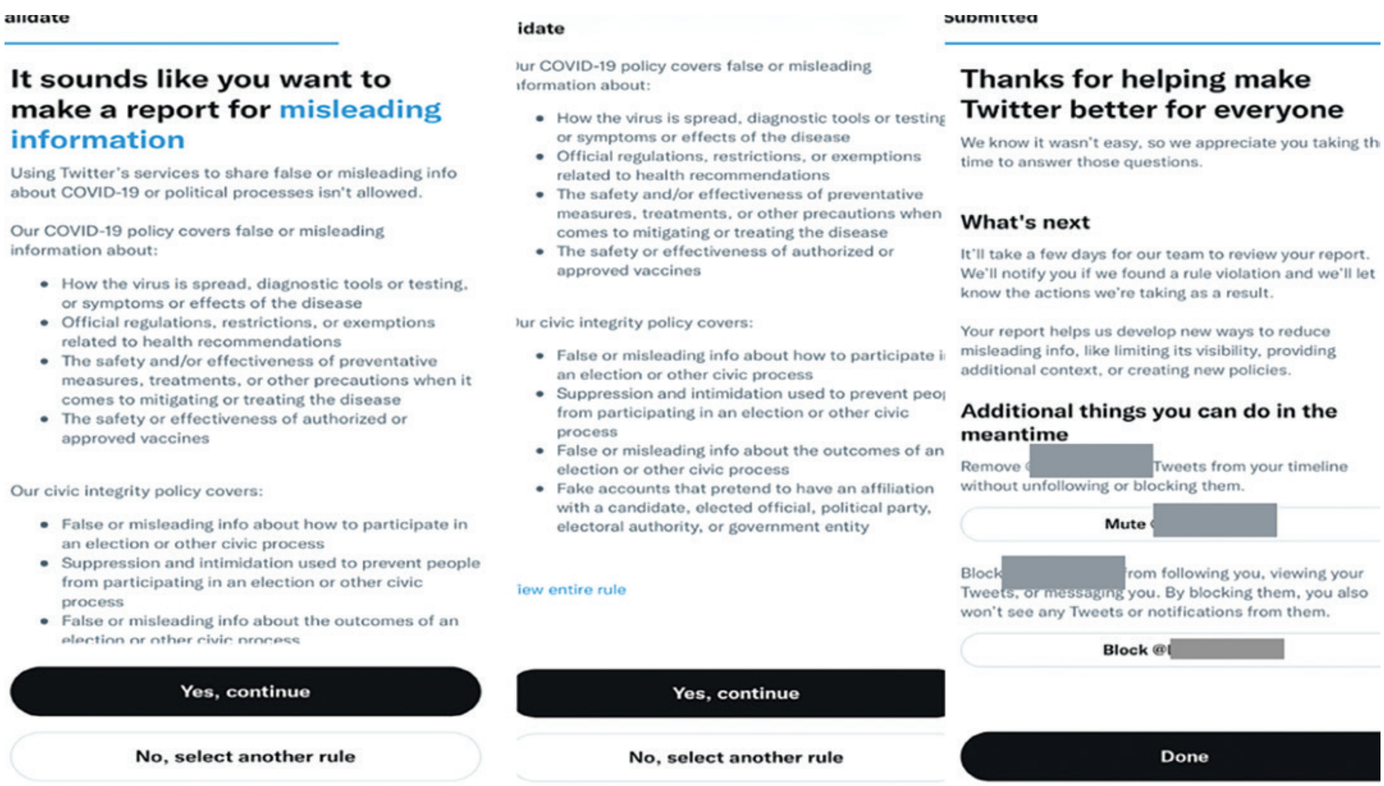

Figure 8: Reporting Interface on Twitter about misleading information (cont'd)

Ostensibly, misleading information is Twitter's response to the rampant fake news in the post-truth world. However, the root problem of the post-truth world and divisive rhetorical landscape is not just a lack of facts or wrong information, but how information is presented with values and ideologies. For example, while feminist users see this tweet in Figure 7 as scientifically wrong, "pro-life" believers may see it as fact. However, Twitter's reporting option under "misleading info" does not offer space for users to provide input on how such tweets can be misleading in the abortion rights debates. In the end, Xiaobo's only options were to either mute or block the user under concern, making her feel powerless and frustrated as a user.

The limited construct of "misleading info" as a violation category doesn't cultivate the virtues of honesty, justice, care, and civility, as it fails to recognize the nuances of this politicized discourse. Without an adequate reporting category, the opportunity is missed to educate the other users who have no idea of how their post could have impacted other users. Without recognizing that other political issues can also be breeding grounds for misleading information, these limited interface choices fail to enact the virtues of justice and care toward marginalized groups and to foster civic discussions and deliberations.

The debates and discussions on U.S. abortion law also happened on Weibo. In a video post by a Key Opinion Leader, "李三金Alex", located in the US, he tells the story of a Louisiana woman who was told by her OB that her baby or the fetus had acrania, a rare congenital disorder in which a fetus' skull does not form inside of the womb; a fatal diagnosis that means even if she were to give birth to the baby, the baby would die. However, according to Louisiana laws, she was denied an abortion, a cruel reality for many women in the US after the overturn of Roe v. Wade (Sanchez & Alonso, 2022). Among the many comments on this video, Xiaobo found one particularly disturbing: "The U.S. population is decreasing and there has to be a way to solve this issue" (see Figure 9).

When trying to complain about this comment, Xiaobo chose "inappropriate value orientations," which seems to indicate a value-oriented concern (an option not available on Twitter). However, the interface does not provide further categories on what's considered "inappropriate value orientations" (see Figure 10). This design does not cultivate virtues of care and perspective,

Figure 9: 李三金Alex's video with comments

as it forces users to quickly label the action without deliberating over what's considered inappropriate value orientation, leaving users to judge based on their own opinions about what is appropriate or not. In fact, Weibo has very detailed definitions on what are considered inappropriate values (see Appendix 1), which users may not be aware of.

The inappropriate information options in Weibo's Community Guidelines seem to protect a wide range of rights from racial and gender rights to disability rights as well as civility such as not using aggressive words and phrases. However, on the interface, "inappropriate value

Figure 10: Weibo's inappropriate value orientation reporting category

orientations" is treated as a separate category from other forms of violations that may fall in other categories such as "personal attacks" or "promoting hate." Using the word "value" explicitly in the interface can be seen as a suggestion to prompt users to consider the dominant social and political values as the standard. For example, ways to "干扰公共秩序" (disrupt public order) can be seen as upholding the "harmonious society" in the contemporary Chinese socio-political environment. In this case, the comment Xiaobo tried to report might not be categorized as violating any policy, yet it presents arguably a discursive violence toward all women who live in the US regardless of their races.

As a transnational feminist, Xiaobo wanted to promote feminist rights and transnational understanding on Weibo, thus seeing this post as problematic. Yet, the categories considered "inappropriate values" don't reflect a global orientation. As in case 1, nationalist affective economy and antagonism toward Western countries, especially the US, on Weibo emboldens such discourse, supported by platform policies as well. In a separate category on "harmful information about current affairs and politics," the community guidelines even explicitly state that such content can include any that threatens the country's (China's) unity, sovereignty, and the national border, explicitly driven by nationalist values (see Appendix II).

DISCUSSION

The framing of reporting interfaces on both platforms reflects different values of the platforms. On Weibo, reporting aggressions and violences is labeled as "complain," a term that reflects a more punitive and antagonistic tone. On Twitter, "report" is a more neutral term and the reporting interfaces can be separate, albeit linked to other functions such as "mute" or "block" a user. Reporting interfaces are procedural, as the goal is to allow users to report or complain to the platform about issues that they deem problematic. On Weibo, the original Chinese term for "complain" 举报 has a cultural connotation of originated in the era of Cultural Revolution where it referred to telling on people to an authority because they violated dominant social and political values. This meaning downplays the procedural aspect but encourages people to treat this function as a method to tell on people, reinforcing an ideological echo chamber. On the other hand, Twitter promotes slower deliberation by making users click through several interfaces to deliberate their reporting actions. This can cultivate a virtue of care and perhaps self-control that may reduce rash actions of reporting.

However, ultimately, both platforms have designed their reporting interfaces with the aim of efficiency, which reduces complexities of how one might interpret the violation categories on the interfaces. While Weibo does have a detailed policy that explains different kinds of violations, the interface presents simplified versions with language that is consistently vague and aligned with dominant political ideologies of its policies. These policies render transnational users who may critique such values powerless. On Twitter, we see more explicit acknowledgement of aggression or violence against marginalized communities, such as those based on race and gender, but this nod to diversity isn't integrated

with its categories of misinformation which don't account for how people with different values may understand "facts" differently. It's also limited only to issues related to COVID-19 and election processes, reflecting a vagueness akin to Weibo's language. Even within the category of political processes, for example, we only see options related to elections. Thus, how can we report on Weibo content that directly attacks and dehumanizes American people when "Western forces" are seen as a threat to national security? And how can we report on Twitter the content that misrepresents reproductive justice and the transnational feminist #MeToo movement?

As we discussed in the introduction, digital rhetorical scholars and platform researchers have argued for a value-driven approach to content moderation policies on social media platforms. The design of the reporting interfaces is intricately connected with policies related to content moderation and online community wellbeing, which often tend to be primarily based on the cultural and legal parameters of the country of its uptake. As such, these policies, when "traveling" with transnational users, may not work as well, incurring problems not unlike what Rebecca Dingo (2012) pointed out when studying the networked arguments of public policy development in the context of transnational feminism. Specifically, she used Inderpal Grewal's term "transcoding" to show how "as rhetorics move they do not always carry the same ideological assumptions" (p. 31). In the context of technological design, we might examine how social media use policies/community guidelines as a genre might have been transcoded across different genre uptakes. For example, as a localized uptake of microblogging technology, Weibo modeled much of its initial design and development ideas after Twitter, but in its community policy language it transcoded policy related to community wellbeing to a very value-driven set of policies, based on dominant political and nationalistic ideologies. Certainly, when mainstream U.S. media and politicians tend to discuss China in a monolithic and othering way, it is also hard to imagine Twitter adopting sufficiently ethical policy when assessing the nuances of Chinese content.

For reporting online aggression and violence, what counts as aggression (such as promoting hate or sharing misleading information) is not universally defined. Both platforms recognize these as inappropriate acts, but their policies interpret these acts, or transcode this universal disdain toward these acts differently. On Twitter, the hateful conduct policy does recognize that certain groups are more disproportionately targeted online and even acknowledges the role of intersectionality ("Hateful conduct policy," 2022). However, these "protected categories" don't explicitly account for people who are abused for their activism or ideologies that are against an authoritarian state. On Weibo, policy on promoting hate clearly condemns the act of labeling people based on biological, psychological, geographical, or cultural markers in order to discriminate, or attack them (see Appendix I). But a parallel category providing rules on talking about current and political affairs and social information clearly indicates what's considered harmful information, prioritizing interests of national borders and security (see Appendix II). For a feminist labeled as a "nation's traitor," this rule can override concerns about the validity of this act of promoting hate. Similarly, on Twitter, the category of misleading information only prioritizes issues related to elections and COVID-19 in the US, without acknowledging other contexts of civic participation.

CONCLUSION

To conclude, we return to the questions that Sano-Franchini (2018) asked at the end of her article to provoke more equitable, accessible design interactions for civic deliberations, especially when dealing with political issues. Our study also works toward Sun's (2020) question on "how [we should] design a social media technology that is efficient, effective, engaging, and empowering for culturally diverse users in this increasingly globalized world" (p. 191). How should technologies be designed to empower transnational users and also cultivate more equitable interactions? Specifically, in the context of reporting online aggression, how might a reporting UI design mediate a transnational user's experience that accounts for the different and possibly competing cultural values that the user may bring? Further, how can interface design empower users to cultivate more positive hexis in addressing the toxic online culture and online aggression?

Of course, the cultivation of hexis is dependent on context. Sun's (2020) practice-theoretic critical

approach to design provides helpful insights, an approach that pays attention to both the messy daily "micro social interactions" of users but also the "macro view" and the resulting global interconnectedness (p. 203). Thus, it pushes technology designers to ultimately promote both cultural and epistemic diversity. Nevertheless, as our cases show, addressing online aggression makes this challenging. Some may even question how one might design with values that should guide transnational user behavior on a platform often bounded by nation-based policies and regulations: how might we decide what's appropriate and what's not given this complex context? How can designers account for what Sun (2020) called the "liminal" experiences of transnational users?

To address such a seemingly impossible dilemma, we turn to critical design and Black technical and professional communication scholars who have inspired us to think and design transformatively. According to Bardzell et al. (2012), critical design is meant to be provocative and transgressive, sometimes challenging the existing ideologies and implicit biases of users. Black TPC scholars have always done this, in centering the experiences of Black TPC genres and practices. In Jones and Williams's (2020) call for the "just use of imagination," they urged that we recognize that systems of oppression were designed "in support of white supremacist and racist ideas and ideals" and thus we must actively use "imagination" to "dismantle, [and to replace] oppressive practices with systems that are founded on equality, access, and opportunity." We recognize that this work emerged from the Black/African American context, and we are not suggesting that all transnational users embody similar kinds of experiences. However, Jones and Williams (2020) helped us recognize how systems are oppressive and limiting by design. To transnational feminists, the oppressive experiences we studied here also require us to recognize that the reporting interfaces were intentionally designed to uphold an ethic of expediency and efficiency with a punitive approach, and technologies are intentionally designed with monocultural values and managed within nation-state borders. Thus, rather than seeing these issues as a failure of the system, as Jones and Williams (2020) warned us, we seek to imagine transformative reporting interface design.

To especially account for transnational users negotiating multiple cultures, why not design reporting interfaces to be a space of reflection and negotiation that cultivates users' relational understanding? To do so, we recommend that social media platforms consider transnational user-centered and accessible design in the following ways:

- Include different languages in their reporting process so users can better understand what such procedures are like, and how they should proceed.
- Offer ways to make the reporting mechanisms more apparent, such as by including buttons that lead to pop-up screens where users can click and read reporting policies, definitions of each reporting or complaint category, next steps in reporting, so that they can pause and consider cultural values or value systems to facilitate more careful judgment, instead of being pushed to make quick decisions.
- Provide opportunities for users to reflect on what value systems drive their reporting decisions, giving users some control over how they might define violations or issues they have encountered but have no way of reporting.
- Give users options within the reporting interface to directly challenge or give feedback on the options/policies provided on the interface, thus giving them more agency to challenge the inadequacy of the existing violation options and reporting features.

Importantly, reporting interfaces should consider multiple ways that content can be oppressive to marginalized groups, expand the perspectives of violation types and increase flexibility on how problematic content is categorized, and offer a more dynamic approach which challenges the traditional or dominant ideological understanding of civility or equality. This would require designers and platform owners to conduct deeper research into cultural conflicts and global political tensions and how they influence a user's everyday life, in order to develop more appropriate policies. Finally, the methodological framework we built here should be helpful to designers and researchers of any interface design. This comparative rhetorical and virtue ethics approach invites researchers and practitioners to engage in more critical, social justice-oriented work across national borders and cultural boundaries.

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APPENDIX I. WEIBO'S DEFINITIONS OF INAPPROPRIATE VALUE ORIENTATION (excerpted from Weibo's community guidelines, May 27, 2021; translation our own)

1. Using exaggerated titles to attract internet traffic, especially when post titles and content don't align.
    1. Publicity stunt on negative topics
    2. Trolling: fueling debates, quarrels, or distorting original content/information of events/topics to deteriorate relationships between or among different communities/groups of users and lead on fights on the Internet
    3. Other approaches to boost internet traffic that violate individual or organizational rights.
2. Promoting hate (Promoting hate refers to the action of using specific physical, psychological, geographical, cultural, and other features to categorize groups of people and tagging them as opposites or enemies, and then using such categorizations to spread or communicate relevant information in order to normalize the marginalization, degradation, discrimination, attacks, or harm on certain groups/communities.)
    1. Organize, lead on, guide majority users to discriminate, defame, insult, or hate individuals or groups based on the following:
        1. Ethnicity, race, religious beliefs;
        2. Gender, age;
        3. Geographical areas, cultural practices of folklores;
        4. Severe illness, disabilities;
        5. Other physical and psychological features
    2. Organize, lead on, guide majority users to disturb public order on Weibo and beyond, including:
        1. Work order of governmental institutions
        2. Operations of corporations
        3. Releasing, performing, and broadcasting of literary, film, and movie works
        4. Releasing, performing, and broadcasting of video games, equipment, relevant products, and exhibitions
        5. Broadcasting of sports events and video games to be held as planned
        6. Legit media's legit reports
        7. Other forms of interruption on public order
    3. Organize, lead on, or guide majority users to complain or report maliciously on Weibo or other platforms.
    4. Rude Aggression: Using uncivil words and phrases, posting cursing or attacking the dead kind of speeches.
    5. Doxxing: exposing other people's personal information and calling on others to conduct irrational doxxing.
    6. Exposing private information or visuals maliciously: By excerpting other people's screenshots or texts, intensify conflicts and instigate cyber violence deliberately.
3. Other Inappropriate information
    a. Describing natural disasters and/or disastrous accidents inappropriately
    b. Content that shows sexual implications, seductive in nature that leads to sexual fantasies
    c. Shown bloody, horror, cruel content that make the human body and mind uncomfortable
    d. Promoting vulgar, kitsch content
    e. Other content that negatively impacts online ecology

The definition, demonstrations, resolutions, methods to solve the issue, and results of posting inappropriate information are stipulated in "Weibo Complaint Processing Detailed Policies."

APPENDIX II. WEIBO'S RULE FORBIDDING HARMFUL INFORMATION ABOUT CURRENT AFFAIRS AND POLITICS (excerpted from Weibo's community guidelines, May 27, 2021; translation our own)

Users shall not post harmful information about current affairs and politics.

Harmful information about current affairs and politics includes posts that threaten national and social security according to current laws and regulations, mainly manifested as:

1. Violating the basic principles of our constitution.
2. Threatening the country's unification, national sovereignty, and national territory integrity.
3. Leaking national secrets, harming national security or national honor and interests.
4. Promoting terrorism, extremism or inciting and/or engaging in terrorist and/or extremist activities.
5. Inciting racial or ethnic hate, racial/ethnic discrimination, harming racial/ethnic unity or racial/ethnic rituals, traditions.
6. Harming national religious policies, promoting cults, superstition.
7. Spreading rumors, disturbing social order, and harming social stability.
8. Distorting, vilifying, desecrating, and negating the deeds and spirit of national heroes and martyrs; insulting, slandering, or otherwise damaging the names, portraits, reputations, and honors of national heroes and martyrs.
9. Promoting gambling, violence, murder, terror, or abetting crime.
10. Inciting illegal assemblies, associations, processions, demonstrations, and gatherings that disrupt social order.
11. Other content prohibited by laws, administrative regulations, and national regulations.

The definitions, presentations, principles, methods, and results of harmful information about current affairs and politics are stipulated in the "Weibo Complaint Processing Detailed Policies."

From the Poor to the Rich: Predatory Inclusion and the Robinhood App

doi.org/10.55177/tc191789

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ABSTRACT

Purpose: Robinhood is a financial investment app that claims to "democratize finance" by connecting millennials and historically underserved populations to the stock market. We explore how Robinhood's user interface shapes investor behavior and the impact this behavior has on existing disparities in the stock market.

Method: We use Sano-Franchini's (2018) method of critical interface analysis to examine three key microinteractions on the Robinhood platform: depositing and withdrawing funds, browsing, and trading stock.

Results: Our analysis shows that Robinhood's user interface encourages users to think of themselves as informed investors but does not give them the knowledge or tools they need to invest successfully. A manufactured sense of urgency encourages users to overtrade on their portfolio, contributing to market volatility and diminishing returns over time.

Conclusion: Our analysis considers the relationship between the interface, the user experience, and investment practices. As such, this paper helps readers recognize how technologies that promise to increase inclusion can actually exacerbate existing socioeconomic inequalities.

Keywords: FinTech, Mobile Investment, Predatory Inclusion, User Interface, Microinteractions

Practitioner's Takeaway:

- Demonstrates the need for UX designers to attend to discrepancies between marketing materials and UX design.
- Examines how interfaces can incentivize reactionary, attention-driven user behavior and decision-making.
- Offers an analysis of an interface that considers how interfaces operate in relation to external markets and parties.

Since launching in 2015, the mobile investment app Robinhood has become one of the world's most popular financial technology platforms, with an estimated 15.9 million active monthly users. Robinhood claims to "democratize finance for all," and its commission-free trades, simple user interface, and populist marketing strategy have resonated with many first-time investors. The subsequent influx of new investors has had unforeseen consequences on the stability of the stock market. In 2021, users flooded the Robinhood platform to purchase shares of Gamestop (GME), a struggling videogame company that had recently become a popular "meme stock" on social media platforms like Reddit and Twitter. This sudden buying frenzy prompted wild fluctuations in the market, with the price of GME jumping from $20 to a peak of $483 per share (a 2,315% increase) in the span of a few weeks. The skyrocketing share prices were a source of concern for the National Securities Clearing Corporation (NSCC), which is a government-regulated intermediary responsible for providing clearing, settlement, and risk management services for trades in U.S. securities markets. The NSCC asked Robinhood to post $3 billion to cover a potential collapse in the share price. Since Robinhood did not have these funds readily available, they were forced to restrict trading of GME stock (Roberts, 2021). According to Jeff John Roberts (2021), this reduced the number of "volatile stocks on its balance sheet while also allowing earlier trades to settle, reducing [Robinhood's] overall risk exposure" (n.p.). The restrictions provoked outrage and elicited conspiracy theories from Robinhood users, who quickly accused the company of colluding with Wall Street hedge funds.

While these claims were ultimately unfounded, they did raise questions about Robinhood's business model and gamified user interface (Roberts, 2021). Robinhood generates profit in a number of ways. In addition to collecting interest on the uninvested brokerage cash in users' accounts, Robinhood earns revenue from margin interest, securities lending, and its cash management services (Robinhood, 2023, "How Robinhood"). However, over 80% of Robinhood's revenue is generated through a controversial process known as payment for order flow (PFOF). When a user places an order, Robinhood passes that order to a third-party known as a "market maker," who executes the trade on Robinhood's behalf. The market maker (usually a large hedge fund) purchases securities in bulk at a slight discount and then profits from the difference between the purchase price and the market price (the "bid-ask spread"). In short, Robinhood is a bundler, collecting smaller orders and selling them wholesale to market makers like Citadel Securities. These market makers benefit in two ways. First, they profit from the bid-ask spread. Second, since market makers are working with high trade volumes, they often have the advantage of knowing, in advance, how these trades will impact the market (Seth, 2020). The underlying power dynamics resemble those of a casino: Anyone with money can play, but win or lose, Wall Street takes a cut and always comes out ahead. Far from dismantling barriers to investment, Robinhood exacerbates the power disparity between its users, also known as retail investors, and institutional players by turning the former into a resource that can be leveraged by the latter.

Robinhood is ostensibly required to adhere to Financial Industry Regulatory Agency (FINRA) Rule 5310, also known as *the Best Execution Rule*. This means they must use "reasonable diligence" to ensure the best price for the customer (FINRA, 2014; Seth, 2020). However, despite enormous leeway in how they interpret and adhere to Rule 5310, Robinhood has been fined for violating it repeatedly (Egan, 2019; Ong & Rote, 2019; Seth, 2020). According to the Securities and Exchange Commission (2020), "Robinhood's customers received inferior execution prices compared to what they would have received from Robinhood's competitors" (n.p.). According to the SEC, these inferior prices cost Robinhood's users approximately $34.1 million, even after accounting for the money they saved through Robinhood's commission-free trades. They also reported that Robinhood has known for many years that its metrics were substantially worse than other retail brokers, but continued to assert that it was outperforming competitors until it was pressured by the SEC to remove these claims from its website (SEC, 2020).

The discrepancy between Robinhood's business model and its populist marketing strategy is an invitation to critically examine the power disparities and consequences of Robinhood's gamified user interface. In this article, we use Jennifer Sano-Franchini's (2018) method of "critical interface analysis" to examine three key "microinteractions" (Saffer, 2013, p. 3) associated with the Robinhood platform: depositing and withdrawing funds, browsing and notifications, and trading stock. Critical interface analysis, as

Sano-Franchini explains, "layers theory, critique, and reflection" (2018, p. 391) to examine how the ideological valence of the interface shapes the user's embodied experience on the platform. Specifically, it interrogates how the presentation, organizing logic, and meaning-making processes of Robinhood's gamified user interface might produce interactions, emotional experiences, and relationships that benefit hedge funds at the expense of retail investors. By tracing the simple, affectively charged, and often repetitive moments that shape the user's experience, we highlight how Robinhood's interface inculcates risky and unprofitable trading habits.

The first section of this article offers a literature review that draws connections between Robinhood's user interface and the relationship between gamification, gambling, and investment. Robinhood expands access to the market, but, as we will demonstrate, the offer of inclusion is implicitly predatory. In the second section, we offer a critical analysis of the Robinhood interface, specifically focused on the experience of depositing and withdrawing money, browsing and notifications, and trading stock. We argue these microinteractions cater to what Lee et al. (2023) refer to as "high-risk trading behaviors," while downplaying the financial dangers of investing (p. 1). Robinhood's gamified user interface both fosters an ever-present sense of urgency and encourages users to conflate their mastery of the app with mastery of the stock market. Specifically, Robinhood combines visuals, cues, and techniques associated with casinos and the gaming industry with the familiar features of social media to incentivize reactionary, attention-induced trading that harms retail investors. As our analysis reveals, Robinhood's user interface is not designed to democratize investment, so much as exploit users by capitalizing on their relative inexperience, asymmetrical access to information, and lack of familiarity with the stock market. As we will argue, this "predatory inclusion" has implications for demographics that have been historically excluded from the stock market, including women and people of color.

SPECULATIVE RISK AND PREDATORY INCLUSION

Robinhood distinguishes itself from competitors like Charles Schwab and E-Trade by presenting high finance in a gamified digital format that resonates with millennials because it resembles social media. Tan (2021) explains that Robinhood's interface reduces "frictions" associated with investing by making the process simple, interactive, and fun (p. 8). Robinhood's mission to "democratize finance" often takes a backseat to this design imperative, which involves using game-like features, prizes, and push notifications to maximize user engagement and incentivize short-term speculation over long-term investment. According to Arthur et al. (2016), speculative investing involves "financial market activities that, when compared to investments, tend to be shorter term, higher risk [...] with a primary focus on making a monetary profit from price movements" (p. 584). Speculation is investment, but the volatility of the stocks in question introduces a level of risk more frequently associated with gambling. The platform persuades users to engage in attention-driven trading even though this actually hurts retail investors (Andrei & Hasler, 2015; Goddard et al., 2015; Wang et al., 2021; Barber et al., 2022). Users who trade frequently are more likely to see the value of their portfolio diminish over time, but interminable, reactive trading is the bedrock of Robinhood's business model. While many of Robinhood's competitors have begun imitating its success by incorporating elements of gamification into their own platforms, Robinhood's user interface is designed to be as simple, engaging, immersive, and habit-forming as possible. With its users embracing erratic investments and trading more frequently, amateur investors have a lot to lose by accepting Robinhood's invitation into the stock market (Popper, 2020). Like a casino whose profits increase the more time patrons spend at the slot machines and poker tables, Robinhood's profit increases the more time users spend engaging with the app.

Robinhood maximizes engagement through gamification, "the use of game design elements in non-game contexts" (Deterding et al., 2011, p. 9). Proponents of gamification (Werbach, 2015) claim it can foster learning, productivity, and user engagement by transforming mundane, repetitive, or time-consuming activities into opportunities for fun and pleasure. However, scholars like Ian Bogost (2014) and PJ Rey (2014) argue that there is something fundamentally deceptive and misleading about gamification, which increases the amount of time, money, and energy people devote to a commodity without increasing its economic value. Far from

"democratizing finance," gamification is a "mechanism of social control" that "minimizes resistance and makes exploitation more efficient" (Rey, 2014, pp. 284, 289). Similarly, Mark Pesce (2014) argues that gamification is intensely problematic because:

> Individuals become players-without-playfulness [...] in thrall to their own dopaminergic reward systems. This is not a world of free will or even the illusion of free will. It is a world of careful control, conscious manipulation, and enjoyable imprisonment. (p. 110)

By reducing human beings to a series of inputs, gamification produces "environments of 'continuous control' that stimulate desire, encourage play or, in [gambling] industry terms, increase 'time on device'" (Reith, 2018, p. 133). On Robinhood, the satisfaction users get from continuously adjusting their portfolios in real time discourages the more traditional (and more profitable) 'buy and hold' approach to investment (Barber et al., 2020; Tan, 2021; Zweig, 2020). The experience of using the app introduces new affective rewards and incentives that keep users engaged but have nothing to do with investing.

Attending to the latent tension between Robinhood's promise to "democratize finance" and the goals of its gamified user interface is crucial to understanding the casino-like power disparities shaping the platform. While games are innocuous, gamified marketing praxis is explicitly associated with manipulation, exploitation, and psychological distress (Al-Msallam et al., 2023). Scholars have described gamification as a form of "soft power" that can be abused for profit and deception. According to Rey, gamification "is less about coercing unwilling subjects and more about creating willing subjects" (2014, p. 279). Al-Msallam et al. concur, arguing that gamification "manipulates consumers by using mechanics and designs" without explaining "how they work" (2023, p. 40). This lack of transparency produces a power imbalance that makes it easy for designers to exploit users. Robinhood, in particular, "has been criticized for '*luring*' [financially; emphasis in original] inexperienced consumers with gamification into making irrational investment decisions" (Al-Msallam, 2023, p. 40). These users experience psychological distress when they are confronted with the real-world consequences of activities that initially seemed like harmless online fun.

In a similar vein, gamification has been criticized for fostering addictive behavior. This criticism is particularly salient in the context of the stock market because the line between "investment" and "gambling" was already blurry to begin with (Livingston, 2005; Nicoll, 2019; Reith, 2018). Bedford (2019) considers buying and selling stock "a rich person's form of gambling" that offers them entertainment (p. 31). Similarly, Albarrán-Torres (2018) describes the stock market as "the most complex casino in the world" and argues that investing and gambling seem to rest on the same promise, which is that "a life-changing event is seemingly in reach" (p. 223). However, investment should be low risk, involves buying and holding assets over time, is expected to produce positive returns, and is not tied to a single event, whereas gambling is high-risk, expected to produce negative returns, and does depend on the outcome of an event (Lee et al., 2023, p. 3, citing Arthur et al., 2016). Both are associated with sensation-seeking and risk-taking (Lee et al., 2023). Gamblers and investors alike are prone to overconfidence, downplay the role of luck, and frequently adopt a system or strategy that offers the illusion of control (Arthur et al., 2016; Grall-Bronnec et al., 2017). Håkansson et al. (2021) argue that "rapid and excessive day trading" may cause gambling disorder (p. 1), while Lee et al. (2023) observe that "there is increasing evidence of gambling within financial markets as well as greater problem gambling severity among financial traders" (p. 5).

Robinhood's user interface seems designed to capitalize on the overlap between gambling and investing, engineering what Natasha Dow Schull (2012) refers to as the "machine zone," an unbroken "flow state" normally associated with electronic gambling. Gamblers who find themselves in the machine zone "feel carried by a choreography not of their own making" (pp. 166–167). Far from being empowering, this "flow state" produces a feedback loop that is "depleting, entrapping, and associated with low autonomy," (p. 167). On Robinhood, investing is designed to take over "the moments of respite in everyday life" (Albarrán-Torres, 2018, p. 222). Like a casino, which uses the maze-like, secluded structure of its main floor and constricted lines of sight to funnel the user's time, attention, and money in a particular

direction, Robinhood is a "digital enclosure" designed to keep users and their buying power in the app (Tan, 2021, p. 9). When Zweig (2020) reached out to Robinhood to ask why its interface incorporates so many "gambling-like visuals," they responded that the design aesthetics of the platform were intended to "make it feel [...] familiar to populations that historically have not been served by the investing industry" (n.p.). This is concerning because Robinhood does not democratize finance–it democratizes speculative risk. By borrowing cues and techniques associated with gambling, Robinhood makes "trading" (a highly technical activity typically associated with large capital and reserved for elites) feel like a common and familiar leisure activity.

Robinhood's former "lottery ticket" feature offers a useful visual metaphor that helps demonstrate this connection. Until 2021, users who received one free stock for opening an account were presented with a choice between three face-down golden cards. Users selected one of the cards by "scratching" it, which prompted a congratulatory message and a screen full of confetti. As a visual signifier, the scratch ticket indexes a longer history of the lottery as a regressive tax that extracts revenue from Black and low-income neighborhoods, then reallocates that money across the entire community. In cities like Chicago, low-income minorities end up subsidizing public education for affluent white communities through state-sanctioned gambling, which is why Henricks and Brokett (2014) refer to lotteries as a "reverse Robin Hood" that privileges the wealthy at the expense of marginalized groups. Robinhood remediated the familiar experience of scratching lottery tickets to introduce users to a form of gambling historically reserved for the wealthiest members of society but did not change this underlying power dynamic. The promise of universal access to the stock market resembles the idea that everyone has an equal chance of winning the lottery: they are myths that conceal the uneven socioeconomic distribution of risks and consequences.

Targeting users with gambling-like visuals to encourage high-frequency, attention-induced trading is an example of what Seamster and Charron-Chénier (2017) refer to as "predatory inclusion." The term refers to any "process whereby members of a marginalized group are provided with access to a good, service, or opportunity [...] under conditions that jeopardize the benefits of access" (pp. 199–200). Traditionally, the term "predatory inclusion" has been applied to policies and practices that exploit historically underserved populations in the name of equity, opportunity, or inclusion (i.e., payday loans, housing vouchers, etc.). In our critical analysis of Robinhood's interface, we argue "predatory inclusion" also applies to digital enclosures that lure users into compulsive, risky, or unprofitable trading behavior. For scholars like Tan (2021), the predatory practices embedded in Robinhood's infrastructure "may also increase trading risks for amateur investors and worsen their vulnerability when pitted against experienced institutional traders" (Tan, 2021, p. 3). In short, Robinhood is an example of what Tarsa and Brown (2018) call "complicit interfaces," or "computational infrastructures that unavoidably open us to precarity" (p. 259). Robinhood's interface generates fun, pleasure, and excitement for users, which removes protective friction from the investing process (Ash et al., 2018; Langley & Leyshon, 2021)

CRITICAL INTERFACE ANALYSIS OF ROBINHOOD

Robinhood uses its game-like interface to cultivate a sense of urgency and encourage users to indulge in riskier, less profitable, high-frequency trading (Arthur et al., 2016). Robinhood is quick to position itself as a solution to inequality. The platform equates democratizing finance with increasing access to the stock market, but does not consider the terms, quality, or consequences of this access for its users. Subsequently, microinteractions on Robinhood's interface draw users into a digital enclosure where pleasure and excitement are leveraged to incentivize reckless and compulsive patterns of behavior that often resemble gambling (Grall-Bennoc et al., 2017; Charles, 2021).

Deposits, Withdrawals, and Bill Pay

Anyone can open a Robinhood account, as long as they are at least 18 years old, a citizen or lawful U.S. resident, and they have a social security number, a residential address, and a bank account (Robinhood, 2023, "What You Need"). The approval process is supposed to take between 5–7 business days, but it usually takes 1–2 (Tamburro, 2021). Once approved, users can immediately begin investing money through the app. While it normally takes up to 5 business days

to transfer funds from a bank account into a brokerage account, Robinhood allows users to access up to $1,000 as an "Instant Deposit" they can begin trading immediately. Users can also click the "Spending" tab at the top of the desktop interface to be waitlisted for the Robinhood Cash Card, a prepaid debit card linked to the user's brokerage account. Unlike traditional debit cards, the Robinhood Cash Card gives users the option of rounding up each transaction to the nearest dollar and automatically investing the extra money in stocks and crypto. Robinhood encourages users to take advantage of this feature by giving them between 10–100 percent of their weekly round-up money (capped at $10 per week) as an extra gift (Vincent, 2022).

Money enters Robinhood accounts seamlessly, where it can be instantly converted into stock or uninvested brokerage cash, but the process of withdrawing money from the app is riddled with friction, delays, and ambiguity. While users can set up automatic deposits, investments, and dividend reinvestments through the desktop user interface, there does not seem to be a way to set up automatic withdrawals. Similarly, users who receive a free stock for opening an account can sell it for credit on the app immediately but cannot withdraw its cash value for 30 days (Robinhood, 2023, "Open Account"). While Robinhood offers no shortage of ways for users to immediately deposit money and begin investing in stocks and crypto, the process of withdrawing earnings is more cumbersome. Like a casino that uses its layout, tinted windows, and distracting array of lights and mirrors to keep gamblers on the gaming floor, Robinhood's platform architecture is designed to keep money circulating on the app.

Browsing and Notifications

Unlike tickers on the stock exchange, which use blue or white to indicate the price of a stock remains unchanged from the previous day's closing price, Robinhood has no symbol or color associated with stasis. On the Robinhood platform, stock is always either increasing or decreasing in value—even after the market has closed. The symbols and color palette of the interface create an impression of transience and sense of urgency that encourage users to make frequent adjustments to their portfolio. By using red and green to denote gains and losses, Robinhood is invoking an affective appeal to its users. Green implies money and success, while red is associated with danger, stress, anger, and financial loss. Subsequently, green pyramid icons next to a stock ticker signify the stock's value is escalating. This invites users to get in on the action while they still have a chance or sell while the stock's value is still escalating. A red inverted pyramid next to a stock ticker, in contrast, signals that a stock's value is decreasing. This is either a warning to cut one's losses or a time-sensitive opportunity to take advantage of a temporary 'dip' in the price of the stock. Regardless, these interactions between the user and the interface are meant to be quick and frequent, which lead Grall-Bennoc et al. (2017) to compare day trading to using a slot machine.

Many Robinhood platform features encourage the short-term, high-risk behaviors associated with speculative investing. In addition to tickers, browsing Robinhood also involves interacting with simple graphs designed to chart the value and price fluctuations of different stocks. When users click on a particular stock to learn more about it, they are taken to a line graph depicting the stock's movement over the course of that day. The header in Figure 1 above the graph lists the name of the company ("AMC Entertainment") and the current price of the stock, which fluctuates frequently. Beneath the price of the stock, there is a ticker that displays how much the price of the stock has fluctuated over a specific period of time. Users can click the tabs below the graph to access corresponding graphs for the previous week, month, three months, year, and five years, respectively. The line in the graph is always displayed in green or red, depending on whether the price of the stock is up or down for the selected period of time. This means a line graph displayed in red on one tab can be green

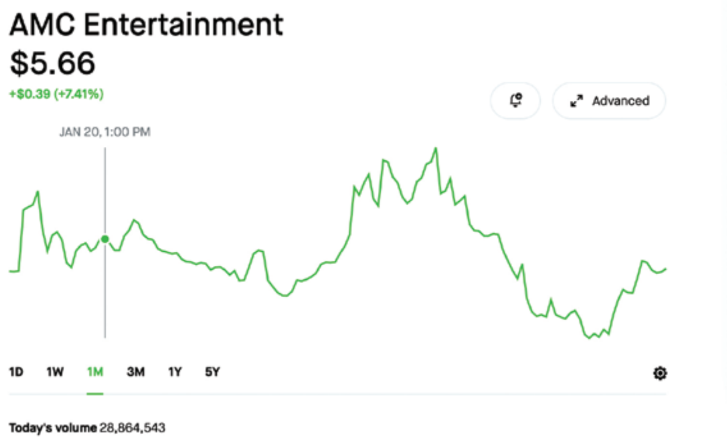

Figure 1: The stock price of "AMC" entertainment

in another (and vice versa) depending on the overall trend of the stock price. Users also have the option of adding their own push notifications set to different price thresholds for the stocks they are following. Rather than helping them to understand contextual factors shaping fluctuating stock prices throughout the day, Robinhood encourages users to see investing as a matter of focused attention and opportune timing.

Users can click the “Advanced” icon in the right-hand corner of the basic graph to access a larger, more intimidating graph that is supposed to offer them more information. The “Advanced” graph as shown in Figure 2 displays the price, moving average, relative strength index, and moving average convergence divergence. Users can hover over each term in column on the left side of the screen to open a window offering a brief definition and a link to a Robinhood Help Center page with more information about the seven “technical indicators” users can access through the platform interface.

These graphs help the Robinhood platform rhetorically situate itself as a “technical analysis” of the financial market. Unlike fundamental analysis, which examines a range of factors (including potential for growth, projected cash flow, interest rates, industry conditions, and the relative strength of the economy) to determine the value of a company, technical analysis transforms “price, volume, and open interest data [...] into visuals using mathematical formulas [...] to help identify trends and find opportunities to enter or exit positions” (Robinhood, 2023, “Technical Indicators”). However, Robinhood’s attempt to position itself as a tool for technical analysis is ultimately disingenuous. Technical analysis is complex, which is why brokerage firms like TD Ameritrade and Fidelity chart hundreds of technical indicators (Gopalakrishnan, 2020; Fidelity, 2023, “Technical Indicator Guide”). Additionally, as Arthur et al. (2016) have argued, chance plays a much bigger role in the financial markets than professional analysts and traders acknowledge, as evidenced by the fact that “only a small percentage of professional analysts and traders are able to consistently outperform the average return of the market” (p. 583). Robinhood is primarily designed to make it easier to invest, not communicate risk or produce a return on that investment.

While the simplicity of the app might increase the overall number of retail traders buying and selling stock, Barber et al. (2022) argue that Robinhood’s “streamlined and simplified interface [...] reduces cognitive burdens, which leads investors to rely more on their intuition and less on critical thinking” (p. 3143).

Figure 2. The “technical indicators” of “AMC Entertainment”

Robinhood's graphs, in particular, are an example of what Albarrán-Torres (2018) refers to as "procedure-images," a term that describes "a system of symbols that defines what the digital platform 'says' or 'does'" (p. 277). By familiarizing themselves with these symbols, users, much like gamblers, start to develop illusions of expertise and agency (Grall-Bronnec et al., 2017). The simplicity of Robinhood's user interface encourages users to believe that understanding the stock market is as simple as mastering the interface, but knowing how to use the platform is not the same as knowing how to make a wise investment. So, while simplified graphs and algorithmically curated lists of recommended stocks ostensibly educate would-be investors, they also risk making Robinhood's users more impulsive, overconfident, and reckless with their investments.

This behavior is reinforced through "push notifications with customized content like earnings reports and significant price movements [that] constantly exhort users to engage with the app" (Tan, 2021, p. 9). Like many forms of speculative investing which require attention to events that occur in real time, these push notifications foster a sense of urgency (Arthur et al., 2016). By making users feel "in the know," they make attention-induced trading seem like a sound financial strategy. Robinhood is very good at "nudging" people into using the app, in part by encouraging them to think of themselves as informed investors who can use real-time updates to take advantage of fleeting opportunities to game the market. In 2020, a *New York Times* article interviewed users who reported checking the app between 10 and 50 times per day (Marcus, 2020). Taken together, the graphs, tickers, and push notifications that shape the experience of browsing on the Robinhood app help illustrate how its user interface capitalizes on affective states as "primary tools for (self-)orientation and steering individuals" (Fischer, 2022, p. 328). Robinhood does not just encourage users to invest. It shapes and automates the experience of investing to make it more emotionally engaging and habit-forming.

Buying and Selling

The Robinhood mobile app is famous for "its signature swipe-up gesture that confirms a stock transaction" (Tan, 2021, p. 8). Swiping has become an ubiquitous feature of mobile interfaces, and scholars have critiqued the "swipe logic" of contemporary mobile apps for fostering passivity, detachment, and apathy (Kingwell, 2019). In the context of Robinhood, however, "[t]his deceptively simple movement of swiping the finger up across the screen generates a sense of familiarity among millennial and digitally savvy investors who navigate their lives around their smart-phones" (David & Cambre, 2016, as cited by Tan, 2021, p. 8). By designing its interface around features its users will recognize from other contexts, Robinhood eases first-time investors into the unfamiliar and potentially predatory world of the stock market (Tan, 2021). Robinhood makes buying and selling stock trancelike and exciting, like electronic gambling in casinos. The constantly changing numbers and colors of the Robinhood user interface keep users tapping and swiping, even when they do not fully understand the process they are participating in (Zweig, 2020). Like casinos, which use their architecture, design, and layout to cultivate an unbroken experience of play, Robinhood's simple, one-swipe trading interface helps produce an immersive "flow state" that increases the amount of time, money, and attention users spend on the app.

The simplicity of Robinhood's one-swipe trading contrasts with the process of canceling a trade, which requires more steps and includes tapping a red "cancel order" button." Each step introduces a new source of friction that helps protect the payment for order flow, which is one reason scholars like Gray et al. (2018) and Tan (2021) accuse Robinhood of using its interface to guide users toward outcomes that are at odds with their best interest. Crucially, Robinhood's user interface is primarily concerned with whether users trade frequently, not whether they trade profitably: "for every dollar in the average customer account, Robinhood users traded nine times and 40 times as many shares as E-Trade and Charles Schwab customers respectively" (Popper, 2020, n.p.). Barber and Odean (2000) have shown that retail investors generally receive lower returns when they overtrade on their portfolios. This is exacerbated by the fact that retail traders are particularly vulnerable, since they do not always have the net worth to absorb losses and protect them from the fluctuations of the market (Albarrán-Torres, 2018). Even when retail traders are successful, institutional players continue to enjoy structural advantages, including more capital, better data, and complex trading algorithms. Individual users might see some return on their investment but, collectively, the financial institutions Robinhood claims to disrupt will always come out ahead.

From this perspective, Robinhood is an example of what Johnson and Johnson (2020) refer to as "affective data technologies," which use "aggregates of data to (re) orient desire, even when that desire leads subjects into precarious situations" (p. 379). According to Johnson and Johnson, affective data technologies leverage the rhetoric of data and statistics to inculcate certain patterns of behavior via habit, pleasure, and compulsion. Robinhood claims to maximize choice, but the user interface offers a persuasive example of how "standardized data can compel humans to become entrenched in rhetorical ecologies that contribute to their own vulnerability" (Johnson & Johnson, p. 370). Far from "democratizing" finance, Robinhood offers its users an exciting, gamified choice architecture that exploits their inexperience, incentivizes unprofitable decision-making, and helps hedge funds maintain their economic dominance at the expense of retail investors—all while misrepresenting Robinhood as a servant of the people.

One specific affective data technology Robinhood uses to "democratize" the stock market is its algorithmically curated lists of recommended stocks. The "100 Most Popular" list, for example, ranks the most commonly held stocks with a market capitalization of more than $300 million. The list is based on the number of customers who hold a position in each security, without considering the size of each position (Robinhood, 2023, "100 Most Popular"). Another list of "Daily Movers" displays the top ten stocks with the largest percentage increase in their prices, as well as the top ten with the largest percentage decrease. Like the "100 Most Popular," the "Daily Movers" is updated throughout the day and only includes securities with a market capitalization of $300 million or more (Robinhood, 2023, "Daily Movers"). These criteria belie the apparent objectivity of algorithms, which, according to many scholars of digital rhetoric, should be considered powerful rhetorical actants in their own right (Reyman, 2017). In other words, the assistance algorithms provide should never be taken as politically or economically neutral, because they serve an explicitly persuasive function (Shepherd, 2020). While the "Daily Movers" and "100 Most Popular" might present themselves as purely informative, "how information is displayed both help[s] and hurt[s] investors" (Barber et al., 2022, p. 6). Taken together, these algorithmically curated lists are but one example of how Robinhood's interface steers users toward specific stocks and certain kinds of trading.

As rhetorical inducements to action, the "Daily Movers" and "100 Most Popular" lists contribute to "herding," a term Barber et al. (2022) use to describe how attention-induced trading encourages periods of intense buying concentrated on a small handful of stocks. According to Barber et al. (2022), approximately 35% of net buying on Robinhood is focused on 10 stocks (p. 3142). This attention-induced trading is not profitable for Robinhood's users. The top 0.5% of the most highly traded stocks each day experience an average negative return of 5% the following month, while extreme herding events lead to negative returns of almost 20% (p. 3143). However, while attention-driven trading is not profitable for users, it is the core of Robinhood's business model. Robinhood's position as a "bundler" gives it a strong incentive to promote reactionary, high-frequency trading, even though doing so consistently results in negative returns for its users over time.

CONCLUSION

As our critical analysis of Robinhood's interface illustrates, expanding access to the stock market is not the same as democratizing finance—especially when the terms of that inclusion are implicitly predatory. Robinhood claims to help retail investors access the stock market, but it is actually designed to help Wall Street access retail investors. Populist branding aside, Robinhood is neither a servant of the people nor a neutral intermediary but, rather, a "bundler" with a strong incentive to maximize user engagement by encouraging retail investors to trade as quickly and frequently as possible. Robinhood's graphs, tickers, and algorithmically curated lists of stocks invite users to think of themselves as informed investors engaged in highly technical financial analysis. Users learn to conflate mastery of the app with mastery of the stock market. Meanwhile, the protean interface fosters a sense of urgency that keeps users logging back into the app to tinker with their profile, afraid to miss an opportunity to "game" the market, despite the wealth of evidence that high-frequency, attention-driven trading contributes to market volatility and harms retail investors. In other words, Robinhood does not democratize investment—it democratizes *speculative risk*. The gamified user interface uses the same cues, visuals, and techniques as the gambling industry, thus

producing a casino-like platform that lures users into compulsive and unprofitable trading behavior.

However, as scholars like Reith (2019) have observed, the consequences of these "aleatory environments" are not distributed evenly across the population (p. 133). Many Robinhood users who invested in GME, for example, were first-time investors with little or no savings (Brown, 2021). They did not have the net worth to absorb heavy losses or protect them from the fluctuations of the market. Robinhood's complicity in exposing users to precarity is alarming in the context of its mission to "democratize finance," which presumably involves expanding its userbase to include low-income and marginalized communities. In fact, Robinhood is already aggressively marketing itself to demographics that have historically been excluded from the stock market, including women and people of color (Howard, 2021; Freyman, 2021; Dagher & McCabe, 2021). While equal access to economic opportunity is undeniably important, the risks and consequences of Robinhood's business model and user-interface might have for vulnerable communities are only beginning to come into focus. Gambling is merely one example of how marginalized communities have historically shouldered the long-term economic consequences of industries that generate revenue via speculative risk. By calling attention to the implicitly predatory and potentially exploitative elements of Robinhood's user interface, we hope to set the stage for future studies that examine the financial impact the Robinhood platform has on women and people of color.

Scholars and practitioners of technical communication are uniquely situated to explore these and other ethical quandaries associated with predatory digital enclosures like Robinhood. Like many tech companies, Robinhood employs rhetorically sophisticated techniques that occupy a gray zone between persuasion and compulsion. As its branding, mission statement, and marketing materials all demonstrate, the company excels at simplifying highly technical information for a general audience. The juxtaposition of its messaging with the opacity of its business model and user interface allows scholars to attend to the disconnect between what tech platforms like Robinhood promise and what they actually deliver. If Robinhood is truly committed to democratizing finance, it could begin by curtailing its most predatory practices and expanding the range of resources, goals, and strategies users can access through the interface. In addition to better educating news users, it could scale back the barrage of push notifications and email updates urging users to return to the app, for example, or develop new features that incentivize balanced portfolios and a "buy and hold" approach to investment. Instead, Robinhood's gamified user interface leverages microinteractions that foster frequent, risky trading and ultimately benefit hedge funds at the expense of retail investors. In many ways, Robinhood resembles a casino, with Wall Street assuming the role of the house. Anyone can play, but the house always wins.

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Review of Research: Critical Interface Analysis as a Heuristic for Justice-Focused, Community-Engaged Design Research

doi.org/10.55177/tc719324

By Ann Shivers-McNair

ABSTRACT

Purpose: In this review of research, I examine Brock's (2018) critical technocultural discourse analysis approach and Sano-Franchini's (2018) critical interface analysis approach as two methods for critical interface analysis that are useful not only for critique but also for community-engaged design work. Specifically, critical interface analysis can offer a more expansive approach to heuristic evaluation that offers design researchers strategies for a) engaging community members in critical conversations and b) including communities and stakeholders in the design research process in the spirit of justice-focused co-design.

Method: I place critical interface analysis in conversation with heuristic evaluation, highlighting similarities, differences, and possibilities for rethinking and expanding each through the connection.

Results: I describe how critical interface analysis heuristics from Brock (2018) and Sano-Franchini (2018) can be applied to support layered community engagement throughout design research processes: specifically, in (1) language setting, (2) research plans, (3) participatory analysis, and (4) research evaluation.

Conclusion: The approaches to critical interface analysis discussed here afford people in traditionally privileged design research roles (in academic, industry, and public sector institutions) a way to honor the experiences and expertise of community members by not only reflecting on the ways they contribute to and are impacted by designs, but also collaborating with them on critical interface analysis.

Keywords: Critical Interface Analysis, Social Justice, Community Engaged Design, Design Research

Practitioner's Takeaway:

- Critical interface analysis can be applied by justice-focused practitioners across design contexts as a collaboration-oriented approach to heuristic evaluation in order to account for the experiences and contributions of users, communities, and researchers in design work.
- Design researchers can use the principles that guide critical interface analysis as a heuristic to highlight the stakes and value of critical approaches in design research in their engagements with communities and stakeholders.
- Design researchers can use critical interface analysis to frame research plans that account for the connections between functions and ideologies, between uses and values, and between actions and relationships.
- Design researchers can partner with and value the expertise of communities through participatory approaches to critical interface analysis.
- Design researchers can evaluate and hold our own research accountable by applying reflexive critical interface analysis to our research practices.

This review of research builds on a tradition of technical communication literature enacting critical interface analyses that pushes design research beyond a narrow focus on "use" (as a way of centering industry priorities) to consider designs in relation to the cultural, ideological, affective, contextual, and embodied experiences of people (Green, 2021; Gu, 2016; Homer, 2020; Jones, 2021; Knight et al., 2009; Mckoy et al., 2020; Moses & Katz, 2006; Sano-Franchini, 2018; Sidler & Jones, 2009; Zdenek, 2007). These approaches to critical interface analysis align with the social justice turn in our field that emphasizes the need, as Jones (2016a) puts it, not only to value "the experiences and perspectives of others (especially populations that are often silenced and marginalized)" but also to take "action to redress inequities" (p. 347). Indeed, critical interface analyses are closely related to many strands of research in technical communication that take a critical, contextual, and multimodal approach to analyzing technologies and communication. For example, Agbozo (2022) applies critical multimodal discourse analysis (CMDA) to conduct a historically, materially, and contextually situated and layered analysis of technical documents for GhanaPostGPS, a geolocation tool, that shares many theoretical and methodological commitments with critical interface analysis approaches.

Both critical interface analysis scholarship and social justice scholarship more broadly in our field have highlighted and reimagined collaborative and participatory approaches to research and design that emphasize more meaningful and sustained engagement with users and communities in design processes—centering more holistic engagements with and understandings of people beyond their interactions with a specific interface (e.g., Rose & Cardinal, 2018; Salvo, 2001; Spinuzzi, 2005). But as Green (2021) outlines, even in participatory approaches, there can still be a tendency to "overly rely on 'use' as the primary metric for measuring individuals' participation in technology development" (p. 333) at the expense of attending to the "broader relations of power" that influence some people "to abandon or decline to take up digital technologies" (p. 334). For this reason, and building on scholars who focus on nonuse (Satchell & Dourish, 2009), Green models how queer theories of resistance can help participatory design researchers take a more holistic approach to understanding why people may choose not to engage with technologies.

Relatedly, HCI and design scholars advocating for design justice (Costanza-Chock, 2020) and equity-centered co-design (Harrington et al., 2019) highlight collaborative and participatory approaches that resist industry-centered priorities in design research, including focusing on what communities are doing before and after they interact with design researchers, rather than engaging with communities with a primary goal of validating the design team's ideas or solutions. As Costanza-Chock (2020) explains,

> Design justice does not focus on developing systems to abstract the knowledge, wisdom, and lived experience of community members who are supposed to be the end users of a product. Instead, design justice practitioners focus on trying to ensure that community members are actually included in meaningful ways throughout the design process. Another way to put this is 'If you're not at the table, you're on the menu.' Design justice practitioners flip the 'problem' of how to ensure community participation in a design process on its head to ask instead how design can best be used as a tool to amplify, support, and extend existing community-based processes. (p. 84)

Harrington et al. (2019) urge researchers, furthermore, to center sustainable engagements after and beyond design research engagement points by asking,

- What are the steps that can be taken immediately following a design engagement such that the impact is immediately perceived [in the community]?
- What are the resources that already exist and can be leveraged and supported, such that they are able to be maintained and progressed in the absence of researchers? (p. 216:19, bullet points added)

All of these community-centered strategies—paying attention to resistance and nonuse, prioritizing what communities are already doing, and planning for accountability and sustainability beyond engagement points—are important for justice-focused, holistic engagements with users and communities. In the spirit of these strategies, this article suggests a complementary strategy for applying critical interface analysis as a heuristic tool for engaging communities and stakeholders—as well as design team members—in

the process of critically examining interfaces to contextually account for ideologies, values, histories, and experiences. In other words, involving communities and stakeholders, as well as designers and researchers, in critical interface analysis is another opportunity to value expertise beyond privileged design roles and privileged embodiments and to build design coalitions (Jones, 2020; Walton et al., 2019) for redressing injustices and inequities in design.

I focus here on two critical interface analysis approaches in particular—Brock's (2018) critical technocultural discourse analysis approach and Sano-Franchini's (2018) critical interface analysis approach—because they both offer adaptable and applicable heuristics that can support justice-focused community engagement in design research. And because both Brock's (2018) and Sano-Franchini's (2018) work highlights their own embodiments as part of their analyses, I account for my own positionality as a white woman working at a research university in the US, where I study, teach, and engage with communities in design research. Community engagement spans my research, teaching, and service work as an academic: currently, that includes co-researching with a borderlands justice non-profit, partnering with community activist-artists in course projects, and co-organizing a UX community. The core values of my practice are grounded in what I have learned from collaborations. In particular, and as we shared in a previous issue of this journal, Clarissa San Diego's approach to community strategy emphasizes accounting for one's own positionality in relation to collaborators and communities (Shivers-McNair & San Diego, 2017, p. 101) and building relationships grounded in genuine listening and connection, going above and beyond revenue-centric metrics (p. 109). I aim to practice that accountable, relationship-centered community strategy in my engagements, and this core value guides me to highlight ways that critical interface analysis can be leveraged for community engagement in design research across contexts.

Furthermore, my positionality and values not only inform my desire to highlight the justice-focused co-design possibilities for design researchers, but my positionality and values are also inextricably bound up in how I make my case. As Brock (2018) explains, acknowledging that our positionalities inflect our research can strategically and critically "expose that validity and replicability are false constructs of positivism, that each researcher brings their disciplinary, cultural, and social perspectives to the research they conduct" (p. 1027). Therefore, I present the arguments and possibilities I share here not as definitive or exhaustive, but as situated, and as invitations for more perspectives and possibilities. In what follows, I contextualize the two critical interface analysis approaches I am focusing on, then I connect critical interface analysis with heuristic evaluation in design research. Finally, I offer strategies for layering approaches to critical interface analysis in order to engage with communities and stakeholders throughout the design process, and specifically in language setting, research plans, participatory analysis, and research evaluation.

CONTEXTUALIZING CRITICAL INTERFACE ANALYSIS

Sano-Franchini (2018) and Brock (2018) take up interaction design theory and practice to define what interface means in their approaches and analyses, both of which focus on information communication technologies (ICTs)—specifically social media platforms—even as they both also call for and model more complexity in how we understand interfaces. Brock (2018) explains that digital interfaces are "the medium through which humans primarily interact with ICT algorithms, symbols, and practices" (p. 1020), and therefore, we must attend to "the interface's symbolic articulation/accretion of meaning. 'Interface' is a complex concept with multiple considerations: Is the screen the interface? Is the 'app' the interface? Is the material form the interface? CTDA says 'yes' to all of these, depending upon context" (p. 1020). Sano-Franchini (2018) follows a similar approach to defining interfaces as material and contextual, and Sano-Franchini suggests that "critical interface analysis can be used to analyze the ideological and rhetorical function of design" across hardware, software, and other technical interfaces (n.p.). Importantly, both Brock and Sano-Franchini insist that understanding how an interface functions or how people use an interface cannot be separated from culturally situated ideologies, histories, meanings, and contexts. In other words, interfaces are not neutral.

And while "critical" is a key operative word in both Brock's (2018) and Sano-Franchini's (2018) work, both

scholars also insist that a critical approach should not be separated from a technical approach to interfaces. As Brock (2018) explains, "Even as the Internet has matured to become our cultural communicative infrastructure, social sciences and humanities research continues to address this multifaceted medium from either an instrumental or theoretical approach" (p. 1013). In this either/or norm, a design researcher might take either an instrumental approach that "focuses on specific, characteristic communicative functions of the technology" or a theoretical approach that conceptualizes "'discourse' from a disciplinary perspective" (Brock, 2018, p. 1013). Instead, Brock (2018) calls for "a critical cultural approach . . . that interrogates [a technology's] material and semiotic complexities, framed by the extant offline cultural and social practices its users engage in as they use these digital artifacts" (p. 1013). Sano-Franchini (2018) similarly pushes back on norms that separate the technical from "the cultural and ideological dimensions of UX," arguing that "while it is of course important to understand the technical aspects of technical communication as well as user's perspectives about technologies, it is also imperative that we consider how technologies affect users through processes of interpretation and embodied engagement" (n.p.).

Because I am highlighting heuristics in each approach that can support community-engaged design research, the next section places critical interface analysis in conversation with heuristic evaluation in design research. In tracing similarities and distinctions between heuristic evaluation and critical interface analysis, my point is to emphasize the value and applications of critical interface analysis across scholarly, pedagogical, industry, public sector, and community contexts—not only to encourage more uptakes across these contexts, but also in recognition that the boundaries of these contexts are themselves fluid and entangled, as many of us engage in and across many of these contexts.

CONNECTING HEURISTIC EVALUATION AND CRITICAL INTERFACE ANALYSIS

I use the term "heuristic evaluation" to refer to the practice of assessing the usability or effectiveness of a design (and often a digital interface) against a set of guidelines or criteria and drawing on the expertise of the evaluator (Nielsen & Molich, 1990). Heuristic evaluation has long been part of professional practice in technical communication (Donker-Kuijer & Menno, 2010; Friess, 2015; Hart & Portwood, 2009; Kantner et al., 2002; Van der Geest & Spyridakis, 2000). And as Grice et al. (2013) show, newer media and emerging information communication technologies (ICTs) have necessarily expanded the field's approaches to heuristic evaluation. Technical communication instructors not only teach heuristic evaluation in evolving ways (Banville & Christensen, 2022), but they also apply heuristic evaluation methods to assessing instructional effectiveness (Brown & Chao, 2010) and learning management systems (LMSs) (Chou & Sun, 1996).

But heuristic evaluation has limitations, particularly if it is the only way a design is assessed. As Carliner (2003) notes, heuristic evaluation (or characteristic-based assessment) is often and should be triangulated with task-based evaluation (with users) and results-based evaluation (such as key performance indicators [KPIs], analytics, and financial metrics). With the rise of UX and the influences of participatory values on design processes (Agboka, 2013; Cardinal et al., 2020; Salvo, 2001; Spinuzzi, 2005), researchers and practitioners often combine or triangulate heuristic evaluation with methods that engage directly with users—an approach that is vitally important, for example, in evaluating accessibility, where relying on checklists without also engaging and collaborating with disabled users in the design process reifies an ideology of normalcy instead of genuine inclusion (Oswal & Melonçon, 2017).

Still, even when heuristic evaluation is triangulated with approaches that directly engage users, the approach to heuristic evaluation can still negatively impact designs (and the people who use them) if the heuristic evaluation relies on imagined or even amalgamated user "types." Personas (which highlight user demographics and goals) and scenarios (which highlight use-cases, often in tandem with personas) are two common approaches that design teams use to try to center users in heuristic evaluation and design work. Sometimes these personas and scenarios are assumption-based, meaning the design team is relying on their own perceptions and assumptions (and the biases and stereotypes therein) about people using their design, and sometimes these personas and scenarios are an aggregation or distillation of user research. But even when it is grounded in

user research, persona-based and scenario-based heuristic evaluation can still erase the experiences and contributions of marginalized people.

Jones (2016b) explains that traditional research-based design "scenarios, though they are based on user feedback, still decontextualize and water down user experiences . . . [because] scenarios are usually a conglomerate of experiences culled from a number of different users and then compiled into a scenario that is developed from themes and patterns that designers perceive to be useful or valuable" (p. 484). Jones argues that this conglomerating (and normative) move undercuts the social justice imperative to actively center marginalized voices and experiences in design. Costanza-Chock (2020) similarly criticizes "stand-in" design strategies, including user personas, that create "abstractions about communities that are not really at the table in the design process" (n.p.) for designers and design researchers working in privileged positions (such as academic and industry institutions) who are not meaningfully engaging, collaborating with, or accountable to the communities impacted by their work.

Instead of relying on abstraction and conglomeration to contextualize heuristic evaluation and design, Jones (2016b) recommends that design researchers and teams "use actual user narratives, users' own stories in their own voices, to replace traditional scenarios, avoiding the recontextualization of user experiences for design purposes and embracing and valuing the knowledge that a user can provide about a design. In other words, give users the opportunity and space to contribute in a participatory process without recontextualizing based on a designer perspective" (p. 486). Jones explains, further, that such an approach "would require that designers not pull-out and focus on themes within a number of narratives to create a single scenario. Instead, researchers would use interviews to create a corpus of narrative inquiry scenarios, which would present full narratives of the participants (void of designer reconceptualization). These re-envisioned scenarios would zero in on each experience as valuable and useful" (p. 486). Thus, instead of relying on abstractions and assumptions about users to inform the personas and scenarios used in heuristic evaluation, design researchers following Jones' (2016b) approach would commit to engaging directly with and honoring the voices of users, and especially those who have been marginalized or excluded from design research.

As the work of this special issue (and the work it builds upon) demonstrates, critical interface analysis is doing this kind of work by contextualizing and evaluating the cultural and material contexts and impacts of interfaces. Furthermore, similarities and differences between critical interface analysis and traditional approaches to heuristic evaluation offer potential for justice-focused researchers across contexts. As Sano-Franchini (2018) has shown, critical analyses of digital interfaces that apply cultural and critical theories have also long been part of the field's research and teaching, building on the foundational work of scholars like Selfe and Selfe (1994), Banks (2006, 2010), and Haas (2012). Sano-Franchini (2018) connects this tradition of critical digital interface analyses with the field's social justice turn (Agboka, 2013; Haas & Eble, 2018; Jones, 2016a; Jones et al., 2016; Williams & Pimentel, 2016), emphasizing the importance of tracing and intervening in the flows and structures of power in and through digital interfaces.

Like heuristic evaluation, a critical analysis of a digital interface focuses on characteristics of an interface, is guided by criteria, and enacts the expertise of the analyst, but there are important differences. In critical interface analysis, the interface characteristics, uses, and functions cannot be universalized because they are inseparable from cultural and material contexts. Accordingly, the evaluative criteria are grounded in theory and cultural reflexivity, and the required expertise is critical, technical, and experiential (Brock, 2012, 2018; Sano-Franchini, 2018). As Sano-Franchini (2022) notes in the call for this special issue, a critical approach to interface analysis necessitates that we "move beyond usability, functionality, and a-political approaches to UX" (with which heuristic evaluation has often been associated) "to consider the ideological, cultural, and political implications of interface design" (n.p.).

There is a productive emphasis on humanistic critique in the technical communication literature enacting critical interface analyses (Green, 2021; Gu, 2016; Homer, 2020; Jones, 2021; Knight et al., 2009; Mckoy et al., 2020; Moses & Katz, 2006; Sano-Franchini, 2018; Sidler & Jones, 2009; Zdenek, 2007). Specifically, these analyses are often conducted by critical, humanistic scholars working in academic institutions (even as many of these scholars have experience in and relationships to industry and community practices). As Sano-Franchini (2018)

explains, just as the approach itself "may be seen as outside of typical UX research methods," the humanistic standpoint of the analyst (even one who is also a user-researcher) is also key to gaining "a more complete understanding of how human beings make meaning from UX design" (n.p.). Brock (2018), writing as a researcher in social informatics, similarly describes his critical research as distinct from research focused on design and use, and the intervention is not directly into the technology design process but rather into the cultural discourses about technologies, because "[t]his is in and of itself valuable work, as technocultural attitudes toward ICTs work very hard to obscure the costs incurred by adopting technological solutions to social problems" (p. 1027).

In other words, Brock's (2018) and Sano-Franchini's (2018) emphasis on humanistic perspectives celebrates the value of critical, cultural expertise of stakeholders who might not always be (directly) at the table in design processes—specifically, both academic researchers and communities. And both Brock and Sano-Franchini also highlight how academic and community perspectives can further modulate and mitigate each other. Sano-Franchini notes that critical academic perspectives can highlight ideologies that communities or individual users may not be aware of (n.p.), and Brock notes that centering communities' perspectives can help academics avoid deterministic interpretations (p. 1017).

Therefore, while traditional approaches to heuristic evaluation can usefully bolster the value of design expertise, critical interface analysis usefully calls into question where we locate that design expertise. Specifically, putting heuristic evaluation and critical interface analysis in conversation helps us problematize the assumption that designers and design researchers (be they in academic, industry, or public sector contexts) have the primary expertise about what is best for designs. Design researcher Harrington refers to this assumption as "design narcissism," or the belief that "people don't know what [they] want until you tell them . . . when in reality, people know what they need, because they live this experience every day" (Fonder, 2022, n.p.).

Resisting design narcissism is crucial for justice-focused design research, because as Costanza-Chock (2020) advocates, design researchers should focus on "how design can best be used as a tool to amplify, support, and extend existing community-based processes" (p. 84). Rethinking heuristic evaluation through the insights of critical interface analysis offers design researchers a way not only to foster more reflexivity within the design team, but also to foster more community engagement in design research and design processes. And, likewise, emphasizing "heuristics" and "evaluation" in critical interface analysis offers design researchers a way to recognize more kinds of (situated) expertise across contexts and, thus, more opportunities for intervening and participating in design processes. Therefore, in the following section, I highlight how critical interface analysis heuristics from Brock (2018) and Sano-Franchini (2018) can be applied to support justice-focused community engagement throughout design research processes.

LAYERING CRITICAL INTERFACE ANALYSIS HEURISTICS

Whether we are working in a design team, on our own, or in a community, critical interface analysis heuristics can help us zoom out from the specifics of a feature or interface to consider cultural, ideological, and contextual aspects of our design processes and to be accountable for the impacts of our design work. In the spirit of Brock's (2018) and Sano-Franchini's (2018) layered approaches, I present layered strategies that facilitate justice-centered engagement with communities and stakeholders throughout the design process; specifically, I highlight heuristic applications for (1) language setting, (2) research plans, (3) participatory analysis, and (4) research evaluation.

Language Setting

The Creative Reaction Lab's (2018) *Equity Centered Community Design Field Guide* advocates for the importance of language setting—that is, developing shared understandings, vocabularies, and guiding baselines—in justice-focused work, because "common language is a crucial foundational step in dismantling systemic oppression and designing equity" (p. 10). Stating critical starting points and definitions is a core strategy of critical interface analysis, as exemplified in Brock's (2018) principles for CTDA:

- "ICTs [information communication technologies] are not neutral artifacts outside of society; they are shaped by the sociocultural context of their design and use.

- Society organizes itself through the artifacts, ideologies, and discourses of ICT-based technoculture.
- Technocultural discourses *must* be framed from the cultural perspectives of the user AND of the designer." (p. 1020)

Indeed, Brock's principles resonate with what I learned from community strategist Clarissa San Diego, which is that definitions—including and especially keywords like "community" or "inclusion"—"should be products of meaningful, localized engagement, not assumptions we start with" (Shivers-McNair & San Diego, 2017, p. 110). Brock's principles could inspire a language-setting exercise to get design team members invested in a critical, contextual approach, or the principles could frame a participatory design workshop with community members. For example, an academic or practitioner collaborating with community members might start by sharing Brock's principles as a way of revealing their guiding values and assumptions, and then invite community members to share their guiding values and assumptions so that together they can localize and highlight shared understandings—and thus lay a foundation to revisit and renegotiate those understandings throughout the engagement. Similarly, teachers, trainers, and mentors can use these principles to language-set with learners and to highlight the stakes and value of critical interface analysis approaches in design research. This language-setting heuristic can also be valuable for making the case to stakeholders for why we need to take a more expansive, critical approach to our research processes—including and especially in our research plans, as I discuss below.

Research Plans

Whether our audience is a UX research team manager, a funding agency, or an institutional review board, design researchers invest time and effort in strategically framing our research for key stakeholders in our research plans and proposals. With the language setting heuristic from Brock's (2018) approach, we can argue for the stakes of a critical approach, and with a complementary set of questions from Sano-Franchini (2018), we can model what it looks like to take a critical approach. For UX practitioners, specifically, Sano-Franchini (2018) offers a set of questions (below) that we might apply or adapt as a heuristic that pushes what might typically be a feature-focused or fix-focused design evaluations to also consider affective, ideological, situated experiences and relationships. In other words, beyond focusing on the relatively isolated (and abstracted or universalized) uses and functions of a new feature or product, design researchers could use Sano-Franchini's questions to frame research plans that account for the connections between (a) functions and ideologies, (b) uses and values, and (c) actions and relationships. Sano-Franchini's UX practitioner-focused questions for critical interface analysis are as follows:

- "How does a given UI mediate how people interact with one another over time? That is, how does pacing and duration as mediated by the UI impact those relationships? Does political engagement take place in the context of those relationships, and, if so, what does that engagement look like?
- What are the purposes and outcomes of connecting users with one another? Are we only connecting users for profit, or are there other outcomes that might benefit the users themselves? If the latter, what potential barriers exist that may keep one or more users from experiencing those benefits?
- How will this feature make people feel (understanding that it is not necessarily a good thing to feel good all the time)? What are the logics of the interface, and how will it encourage them to interpret and engage with the world around them?
- How and why might we create designs that encourage more active, critical, and deliberate participation among users?
- What kinds of content, values, and logics are rewarded over others? What are the affective, temporal, and political consequences of these priorities?
- What is the relationship and place of these mediated interactions within the larger media ecology?
- How can we keep in mind that when dealing with political issues, people need background information—whether about democracy, institutionalized racism, immigration, healthcare, environmental issues, and/or women rights—to make informed decisions?

- Finally, what kind of society do we want to live in? And, how might we design technologies that bring us to that ideal?" (pp. 402–403)

Regardless of the design context, these are not easy questions to ask or easy conversations to have. Pushing heuristic evaluation to engage on this level of ideology, context, and culture requires time, energy, and dispositions that may not be readily supported by our colleagues, clients, deadline structures, or infrastructures. For example, checking a new feature or product against standardized usability and accessibility criteria is likely more expedient and more comfortable than taking time to account for whose values, bodies, relationships, and experiences are privileged or dis-privileged by that feature or product—but that is precisely the kind of engagement we need to make space for in our processes, starting with our research plans. Indeed, when I introduce students to the UX research plan, the template document I share is longer than some models because it includes prompts—inspired by Sano-Franchini's questions, which students also read—for accounting for researcher positionality in relation to the community/users, as well as researcher and community values, as part of accounting for audiences, stakeholders, and goals (which otherwise might default to design team goals). But if we are committed to working toward justice, these are precisely the kinds of questions and conversations we must advocate and find a way to make space for from the beginning in design research.

Participatory Analysis

Justice-focused co-design processes can invite and value the expertise of communities and participants not only in the design of products or content, but also in the analysis of design research. Gonzales (2022) exemplifies this layered approach by modeling participatory data analysis of participatory translation processes. Across three case studies, Gonzales engages community partners both in the act of translating and designing content and in the act of analyzing and reflecting on the process of participatory translation. Making the case for participatory analysis, Gonzales argues for an approach that prioritizes relationships over abstracted data points (2022, p. 57), explaining,

> Rather than engage in systematic coding of a limited data set, I engaged in participatory data analysis by tracing multilingual experiences across contexts focused on issues of language, power, and positionality--discussing these experiences with participants both during and after each project was completed and then drafting and getting feedback from participants on how their multilingual experiences are presented in this book. (2022, p. 56)

In other words, Gonzales interpreted data with the people she was engaging, and design researchers can emulate Gonzales' (2022) justice-focused approach by partnering with communities and participants in the analysis and evaluation of interfaces. Sano-Franchini (2018) provided a set of questions to guide a critical interface analysis that design researchers could apply or adapt to facilitate co-analysis workshops. Sano-Franchini's questions for performing critical interface analysis are as follows:

- "Who is the target/primary user? Who are the secondary users, unintended users, and other stakeholders?
- What are the tasks, interactions, and relationships (human-computer, human-human) that are facilitated by and through the interface?
- What kinds of content are presented through the interface?
- What are the organizing logics of the interface?
- What are the ideological and cultural values and assumptions imparted through the interface, whether through its content, its organizing logics, or the interactions facilitated by the site?
- In what kinds of environments will these tasks be conducted and these interactions take place?
- What are the various affordances of the interface? Who benefits from its use and how do they benefit? What are the limitations of the interface? What and whom does it leave out?
- What are the range of emotions and embodied responses that are enabled and encouraged by the interface?
- On what memories, literacies, and histories does the interface rely?" (pp. 391–392)

To support the co-analysis process, a design researcher might start with a language setting discussion (perhaps following Brock's heuristic in the Language Setting section above), and then move through a co-analysis using Sano-Franchini's heuristic above—making sure, also, to leave space for participants to

contribute their own analytic questions, as well. The activity could be structured with common collaborative analysis techniques like affinity diagramming, in which participants generate individual responses on stickies and then group and make sense of the stickies together. The co-analysis activity could be applied to an existing interface, or it could be used to iteratively develop and refine a prototype or speculative interface.

But it is also important for design researchers to make space for and honor co-analysis that does not take the shape of a more formal method—like affinity diagramming—that practitioners and academics more readily associate with analysis. Just as it is important to be able to share heuristics and methods we were trained in, it is also important to be able to recognize and support community-led analysis in forms that align with community practices and values—be they in conversations, community events, or asynchronous online interactions. What might begin, from an academic or practitioner researcher's perspective, as a traditional interview could unfold into co-analysis, or, better yet, we can build relationships and understandings with communities that reorient our processes from the start. Either way, academics and practitioners can support community-led analysis by first recognizing and valuing it ourselves, and also by highlighting the affordances and insights of community-led analysis when we report to stakeholders and colleagues. This is why it is important for design researchers to appropriately credit our co-analysts. For example, Gonzales (2022) included participants' authored accounts in her book and ensured they are credited in the book's meta-data as well as in its pages.

Research Evaluation

Just as Sano-Franchini's (2018) heuristic invites and models a reflexive, critical approach to evaluating a design, critical interface analysis approaches also invite design researchers to critically evaluate our research as itself an interface that is deeply contextual and that impacts people's experiences. A critical orientation to research-as-interface is modeled in Cobos et al.'s (2018) definition of interfaces as a way of accounting for concept uptakes in cultural rhetorics research: specifically, the mediated, negotiated interfaces not only of "culture" and "rhetoric," but also of varying definitions and approaches within work that identifies as "cultural rhetorics" (p. 144). Highlighting the situated, mediated work of scholarship as an interface calls for "[a]rticulating and situating how we use our terms of inquiry," and thus "interrogating concepts and our uptakes of them so that we do not take these terms nor our agendas for them for granted" (Cobos et al., 2018, p. 141). In other words, treating research as itself an interface is an important reflexive tool for researchers to help us avoid taking our research agendas and terms for granted.

Brock's (2018) requirements for CTDA (listed below) can be a helpful way for design researchers to evaluate our own research as an interface—even if we are not taking up a formal or full CTDA approach. Brock's requirements for theoretical application in CTDA are as follows:

1. "The theory [used in the analysis] should draw directly from the perspective of the group under examination;
2. Critical technoculture should be integrated with the above cultural continuity (Christians, 2007) perspective." (Christians, 2007, as cited in Brock, 2018, p. 1017)

And Brock's requirements for multimodal engagement in CTDA are as follows:

1. "Multimodal data operationalization;
2. Multimodal interpretive research methods;
3. Critical cultural framework applied equally to all data modes." (p. 1023; numbers in original)

Brock's requirements for theoretical engagement remind design researchers and their stakeholders to think more critically and expansively about our assumptions and interpretations. For design researchers, "theory" can come from many places—from academic scholarship, social movements, and/or from the data, mental models, and experiences in a specific design context—but the point is that it comes from somewhere, whether we acknowledge it or not. And, as Brock argues, we have an opportunity to de-center privileged discourses, knowledges, and experiences in how we approach our design research. Regarding the cultural continuity requirement, Brock (2018), citing Christians' (2007) article "Cultural Continuity as an Ethical Imperative," clarifies that "'cultural continuity' in technology studies is meant to decenter theories of technological determinism premised upon the beliefs of a dominant culture or modernist technological enterprises" by instead centering "historically and geographically constituted people as the value-laden

creators of technological enterprise" (p. 1017). No matter what our approach or context, Brock's requirements are an important reminder to be careful about and accountable for the assumptions that guide our research and the interpretations we produce, and to take the opportunity to de-center privileged perspectives. For example, if we make the effort to account for community values in our UX research plans (as I described above), we should also hold ourselves accountable to those values and relationships in our reporting and in our debriefing and reflecting with stakeholders and communities.

Furthermore, Brock's definition of multimodality in research requires the analyst to treat interfaces as both an artifact and a medium, and this approach reminds community-engaged design researchers to account for "technology as a troika of artifact, practice, and belief" (Brock, 2018, p. 1023). In other words, a critical understanding of interfaces requires us to account for material or tangible interactions as inseparable from not only what people do but also what people think—and, as Sano-Franchini's (2018) approach especially emphasizes, how people feel. Just as digital interfaces are inextricably bound up in ideologies, experiences, and contexts, so, too, are our design research processes. This means we have to account for the interrelations of artifact, practice, and belief not only in the products or content we design, but also in the processes by which we research content, products, and the people who interact with them.

In practice, this can look like making space for community collaborators to share their experiences with the co-research/co-design process in addition to sharing their experiences with the interface or product (perhaps in an anonymous venue, or with an ombudsperson or evaluator other than the researcher)—and then highlighting those experiences in reports and evaluations alongside experiences with the interface. Indeed, inviting colleagues or community members to serve in a recognized role as an evaluator of community experiences in a research and design process, or offering to serve as an evaluator for another researcher's project, could be a fruitful expansion of heuristic evaluation in our practice. Sano-Franchini (2018) notes the importance of accounting for experiences over time in critical interface analysis, and the same is true in accounting for the interrelations of experiences and values: We can and should trace these experiences with interfaces and with research and design processes over time, building relationships and centering community experiences and values in our measures of success.

CONCLUSION

A critical, contextual approach to interface analysis is an important tool for community-engaged researchers who want to center people's lived experiences and insights throughout the design process. As I have discussed, Brock (2018) and Sano-Franchini (2018) challenge mainstream interface analysis approaches to go beyond focusing on universalized uses and functions and, instead, to contextualize experiences as cultural, ideological, affective, relational, and situated in time and context. This critical, contextual orientation aligns with work by scholars like Jones (2016) and Costanza-Chock (2020) who have revealed the potential for erasures and extractive relations in heuristic evaluation and design work that relies on abstract representations of users' experiences and voices. Instead, these scholars call for work that is accountable to the contextual, embodied experiences of people who engage with, contribute to, and are impacted by designs—and especially the "communities most targeted by intersectional structural inequality" (Costanza-Chock, 2020, p. 85).

The approaches to critical interface analysis discussed here afford people in traditionally privileged design research roles (in academic, industry, and public sector institutions) a way to honor the experiences and expertise of community members by not only reflecting on the ways they contribute to and are impacted by designs, but also collaborating with them on critical interface analysis. Such collaborative work answers Costanza-Chock's (2020) calls for design justice work to account for and intervene not only in "the values that we encode in the objects and systems we design," but also in

- "who gets to participate in and control design processes" and
- "who receives attention and credit for design work, how we frame design problems and challenges, how we scope design solutions, and what stories we tell about how design processes operate." (p. 109; bullets added)

After all, both critical interface analysis and heuristic evaluation leverage (and thus reinforce) the expertise of the person doing the analysis,

even as critical interface analysis also emphasizes the contributions of people who use technologies. Costanza-Chock (2020) praises the work that Brock's CTDA approach to critical interface analysis does to "unpack how marginalized users often produce technocultural practices that become the core use case for digital tools and platforms, with Black Twitter as a key case study," and adds that "[m]uch more work remains to be done to mainstream these and other approaches to proper attribution in design." (p. 114). I agree, and in addition to using critical interface analysis to properly attribute historical and existing design practices, academic and industry researchers can also engage communities as partners in critical, analytical design research. Instead of treating the product of the collaborative work as data to be abstracted into themes, researchers can use critical interface analysis processes to properly attribute (and compensate in appropriate ways) community partners' intellectual and material contributions to design research and design processes to get us closer to a more just and equitable society—as Sano-Franchini (2018) puts it, the kind of society we want to live in.

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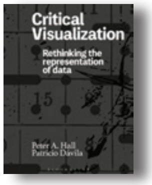
Jackie Damrau, Editor

Books Reviewed in This Issue

The reviews provided here are those that are self-selected by the reviewers from a provided list of available titles over a specific date range. Want to become a book reviewer? Contact Dr. Jackie Damrau at jdamrau3@gmail.com for more information.

Critical Visualization: Rethinking the Representation of Data

Peter A. Hall and Patricio Dávila. 2023. Bloomsbury Visual Arts. [ISBN 978-1-3500-7724-9. 256 pages, including index. US$34.95 (softcover).]



Critical Visualization: Rethinking the Representation of Data is an ambitious, sometimes polemic book that may distress some readers. After all, who wants to hear that they've been thinking wrong over their entire career!

Hall and Dávila's central thrust is that we too often blindly assume that all the data submerging us is neutral. They counter: "The veil of neutrality drawn over data visualizations becomes more opaque and impenetrable when the socio-technical infrastructure that produces them is obscured behind the so-called neutral technologies: human decisions sealed behind computational logic (i.e., algorithms)" (pp. 10–11).

The subtitle, "Rethinking the Representation of Data," suggests their intention to dive deeply. Thus, they recommend asking "*Who* made the visualization and for whom? *When* did they make it? *Why* did they make it? *What* social/cultural conditions was it made under? *What* belief systems is it reinforcing or challenging? *What* processes, or translations, preceded its production? *What* has been excluded?" (p. 14).

Without posing such questions, say the authors, we often unthinkingly adopt presented data without considering the context, particularly producers' biases and what they may have erased. Importantly, we thereby fail to see how the data serves to validate such systems of oppression as colonialism, capitalism, and rule by older white men.

Not surprisingly, the many negative examples are sociopolitical. Conditions within war-ravaged Yemen, the unfulfilled promise of smart cities, urban planning designed to protect wealthy New Yorkers, risk profiling along United States borders, measurement of moral qualities of human races, maps of poverty and neighborhood improvement, Statistics Canada's efforts to identify races (early versions erased many individuals), and much more show mostly the perils of not asking the authors' incisive questions.

The book also has some positive observations. This we see especially in descriptions of community mapping projects. (Descriptions in these sections, however, have less bite than those of attack.) The most successful illustration of the book's arguments is the maps and visualizations made by W. E. B. Du Bois at the 1900 Paris Exposition to interpret Black life in the United States.

As mind-opening and colorful as *Critical Visualization* is, it's not perfect. The authors more than once attack Edward Tufte, a graphics guru well-known to STC members, as overly accepting of data speaking for itself without examining its history. Tufte's books and seminars refute this charge. Also, the publisher should have tested the unreliable index.

The book includes some wonderful graphics, but many large ones have been squeezed onto their pages so that I find the wording within the pictures impossible to read, even with my 20-20 vision and a magnifying glass.

Hall and Dávila allude to machine learning in several pages (it's not in the index). I wonder what would happen if they brought into the book something like ChatGPT, which stormed into our consciousness after the authors finished the book. They would surely have more to say.

Avon J. Murphy

Avon J. Murphy is an STC Fellow who serves the Society as a researcher. A onetime college professor and government writer, he is a technical editing contractor and the principal in Murphy Editing and Writing Services, based in western Washington.

Can Science Be Witty? Science Communication Between Critique and Cabaret

Marc-Denis Weitze, Wolfgang Chr. Goede, and Wolfgang M. Heckl, eds. Springer. [ISBN 978-3-662-65753-9 (eBook). 242 pages. US$34.99 (eBook).]

In the foreword to *Can Science Be Witty? Science Communication Between Critique and Cabaret*, scientist Wolfgang M. Heckl shares his discovery that funny, easygoing colleagues went stale when they discussed scientific issues in public. For research to be remembered, dry facts must find their characters and go on heroic journeys.

Storytelling is gaining ground in the genre of science cabaret. To create the stories, this book suggests finding amusement in experiments that went wrong and exploring the gray areas between amusement, satire, and criticism. *Can Science Be Witty?* also shares instructions for injecting humor into science.

One caveat to the reader: the book was machine translated from German to English and human edited,

but the sentences may not flow as smoothly as they would in their original language. It's also helpful to remember that humor doesn't always translate well; it relies on wordplay, which varies greatly in languages and dialects.

If you're familiar with poetry slams (where poets perform spoken-word poetry in front of an audience and a panel of judges), science slams are similar, but with scientific content—and maybe a few PowerPoint slides. Factor in humor, satire, and ridiculousness, and you're on your way to understanding how this book uses the word *cabaret*.

Chapter 3, Laughter Tears Down Walls, provides excellent examples of combining science and humor. Contributor Vince Ebert writes that "scientific thinking is nothing more than a method of testing conjectures" (p. 27). His scenario starts with "there might be some beer left in the refrigerator" (p. 28). If he checks, he's engaging in a preliminary form of science, which is different than theology where conjectures aren't usually checked. So, if he asserts, "There's beer in the fridge!", he's a theologian. If he checks, he's a scientist. If he looks, finds nothing, and still claims there's beer in the fridge, he's an esotericist. Ebert confirms that science can be witty when he ends this example with "an esotericist can claim more nonsense in five minutes than a scientist can disprove in a lifetime" (p. 28).

In Chapter 8, Searching for Humor in the Deutsches Museum, Wolfgang Chr. Goede writes about Jürgen Teichmann, Germany's longest-serving museum educator. He tells a story about Otto von Guericke and the proof of air pressure using the Magdeburg hemispheres. Guericke pumped out some of the air to create a vacuum inside, then had eight horses harnessed to the left and right to pull the hemispheres apart. What was the achievement? "Finding sixteen horses so weak that they couldn't tear the hemispheres apart" (p. 87). Plain, simple humor.

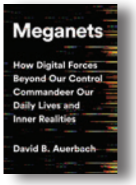
While *Can Science Be Witty?* in its entirety won't make you laugh out loud, there are several gems throughout. Whether science-pop is an actual musical genre, you might get a kick out of the silly lyrics in Chapter 5, Date an Engineer. For those who like illusions and magic, Chapter 7, Scientists, Magicians, and Charlatans might capture your attention. To learn important rules for making your jokes work and how humor triggers laughter, read Chapter 10, When a Dalmation Comes to the Cash Register. (You might also add some of Eckart von Hirschhausen's jokes to your repertoire.)

Michelle Gardner

Michelle Gardner is a contract senior writer at Microsoft focused on their cloud portfolio. She has a bachelor's degree in journalism: public relations from California State University, Long Beach, and a master's degree in computer resources and information management from Webster University.

Meganets: How Digital Forces Beyond Our Control Commandeer Our Daily Lives and Inner Realities

David B. Auerbach. 2023. PublicAffairs. [ISBN 978-1-5417-7444-5. 352 pages, including index. US$30.00 (hardcover).]



The digital linking of much of humanity into huge online data networks has brought great benefits but has also opened a Pandora's box of intractable problems—floods of disinformation, toxic online discourse, extreme political and social polarization, pervasive corporate and governmental surveillance, online scams, and much more.

Drawing on more than a decade of experience working as a software developer for Microsoft and Google, David Auerbach has produced a perceptive analysis of the problems caused by what he calls meganets and sketches out a first cut at mitigating their harm.

Meganets, as described by Auerbach, are huge, semiautonomous data networks that operate at levels of volume, velocity, and virality that make them too big for humans to know or control. Driven by feedback loops of algorithms and human interactions—visits, likes, purchases—they are continuously evolving, have the capacity to self-organize, and are as ungovernable as the weather.

To develop his case, Auerbach traces the development of meganets from early chat and meeting apps through social media, indexing and search, games and commerce, to AI and the metaverse. Using examples from many fields—online gaming, cryptocurrency, government efforts to leverage technology for social ends (India, China), and others—Auerbach shows that while you can attempt to control code, you can't control how people use it. As a result, meganets spin out of control, behave in ways well beyond what their creators intended, and cause problems that spill into the offline world.

Meganet chaos has produced numerous calls for reform and regulation. In carefully reasoned

arguments, Auerbach shows that the kinds of "fixes" being attempted so far—de-platforming bad actors, tailored attempts to police specific content, demands that corporations control the uncontrollable—are largely ineffective and often counterproductive. But that does not mean we should give up in despair. While the meganets are here to stay and can't be "fixed," Auerbach argues they might be tamed and coaxed into retaining their many benefits, while doing less harm.

Instead of resorting to bans and censorship, he argues we should look for systemic ways to apply the brakes to the meganets' velocity and virality, thus slowing down their aggressive feedback loops and diluting their power. Toward this end, he offers a number of broad suggestions—limiting automatic forwarding, forcing turn taking on discussion threads, randomly injecting new elements into threads and forums, and more—that might be tried. In choosing tactics, our aim should be to preserve as much individual autonomy and liberty as possible, while still effectively restricting the most noxious manifestations of meganet social culture.

Auerbach acknowledges that his suggestions are controversial, untried, and will need refinement and testing, but as other approaches haven't worked, he believes approaches along the lines he suggests may be the best shot we have.

Those who hope to preserve the online world's vitality, while still making it a less toxic, more habitable place, should find much in *Meganets* to clarify their thinking.

Patrick Lufkin

Patrick Lufkin is an STC Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

User Experience as Innovative Academic Practice

Kate Crane and Kelli Cargile Cook, ed. 2022. The WAC Clearinghouse and University Press of Colorado. [ISBN 978-1-64642-268-5. 330 pages. US$36.95 (softcover).]

User Experience as Innovative Academic Practice compiles 13 scholarly articles describing user experience activities intended to improve collegiate classes. The chapters explain case studies that focus on applying common user experience (UX) methods to academic learning. Some articles embrace what would be considered traditional improvements to usability; others expand to customer experience (CX) or improvements to the overall experience students had in the course.

Readers working outside academia may find the need for this kind of research surprising. Some case studies focus on basic ideas—not just UX principles, but basic common-sense ideas like surveying your students about what works and doesn't work for their education. Jennifer Bay, Margaret Becker, Ashlie Clark, Emily Mast, Brendan Robb, and Korbyn Torres explain, "There has been extensive research on user-centered design, usability, and the user experience in professional and technical writing, but we have found less attention to how we are to understand students as "users" in an undergraduate major" (p. 268). Each article in this book tries to lessen that deficiency by applying usability principles to academic courses. For example, Sarah Martin developed user profiles addressing the assumption that all students spoke English (p. 55). Beau Pihlaja consulted students early in the semester to redesign his syllabus in efforts to improve its user-centered design (p. 112). Luke Thominet acknowledged criticisms about inefficiency in design thinking and quantified the hours he spent using a design thinking process to create student learning outcomes for a writing and rhetoric program (p. 179).

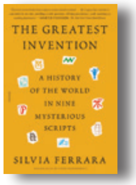
User Experience as Innovative Academic Practice shares useful ideas for improving academic courses. Some case studies followed traditional UX methods like journey mapping, user interviews, and surveys. The collection shares techniques that professionals in academia can use to improve their courses. While those ideas might not seem novel for professionals working in usability, incorporating them into courses exposes students to a more collaborative educational experience and provides faculty with methods to make their courses more applicable to the current market demand and the interests of their students.

Stephanie Saylor

Stephanie Saylor is a usability engineer at Yellow Duck Technologies, Inc. She received her master's degree in digital communication from Johns Hopkins University.

The Greatest Invention: A History of the World in Nine Mysterious Scripts

Silvia Ferrara. 2022 (translated by Todd Portnowitz for Farrar, Strauss and Giroux). Picador [ISBN 978-1-250-86299-0. 304 pages. US$18.00 (softcover).]



The scripts—the writing systems—in Professor Silvia Ferrara's book have proved mysterious indeed. She describes *The Greatest Invention: A History of the World in Nine Mysterious Scripts* as a "book [that] recounts the invention of writing" (p. 4). In addition, the book is a history of unraveling the mysteries of the scripts in her story.

Ferrara does approach history as a storyteller, writing "as if speaking to you" (p. 280), making the reading conversational. She discusses the people and places involved as well as the challenges and successes that led to the discoveries of the scripts in *The Greatest Invention*. Her story begins 4000 years ago in Crete.

The book is divided between scripts that have not been deciphered and those that have been invented. Cretan Hieroglyphic, the very first discovery, is in the undeciphered category, as are several other Cretan systems: Linear A, Cypro-Minoan, and the Phaistos Disk. (Another Cretan script, Linear B, has been deciphered.) The story continues with Easter Island's mellifluous sounding Rongorongo before turning to scripts that were invented.

While there is much speculation about the purposes of the undeciphered scripts, "writing systems flourish when they're channeled toward a common aim," (p. 154). Egyptian hieroglyphics were meant to celebrate very important persons (VIPs). The Mesopotamians needed a writing system to keep bureaucratic records. Early Chinese script messages communicated with the dead. Mayan script reanimated both people and objects. These systems all became part of the social framework.

Ferrara examines the qualities new writing systems have in common and what it takes to establish these scripts in a society. She also sets aside several chapters to discuss writing systems invented by individuals, such as Sequoyah, whose Cherokee script is still in use, and others invented by civilizations that didn't pass the test of time.

To conclude *The Greatest Invention*, Ferrara brings her expertise to bear with guidance on deciphering texts, with examples from current scientific research she and other scholars have experienced. There are recommended steps to decipherment and a list of what not to do. "Completing the puzzle of an undeciphered script, demands…the force of logic, and the force of creativity and flexibility" (p. 248).

The Greatest Invention provides a wealth of information on the development of writing in different cultures throughout the world. Illustrations of historical scripts add to the interest. The conversational nature of this text and references to pop culture make this an easy read, although I found the author's frequent digressions distracting. It also seems to be aimed at an audience who is familiar with linguistics; linguistic references are used throughout without explanation. For a reader who is not a linguist, a glossary would be helpful.

Linda M. Davis

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds an MA in Communication Management and has specialized in strategic communication planning, publication management, writing, and editing for more than 25 years.

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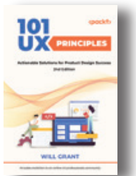
101 UX Principles: Actionable Solutions for Product Design Success

Will Grant. 2022. 2nd ed. Packt Publishing. [ISBN 978-1-80323-488-5. 432 pages, including index. US$39.99 (softcover).]



101 UX Principles: Actionable Solutions for Product Design Success attempts to provide systematic principles for a field that has historically resisted them. There is a saying in the user experience (UX) professional community that the answer to every question is "it depends," a response grounded in the assumption that every product is so dependent on its context that no systematic rules for product development can be defined. Will Grant argues that there are fixed principles that can be used across products, though he strongly cautions that "[n]othing in this book means anything unless you test with real people" (p. 24).

The principles themselves range from fairly abstract (Principle 1: Everyone Can Be Great at UX, p. 3) to the very specific (Principle 28: When a User Refreshes a Feed, Move Them to the Last Unread Item, p. 113). And as Grant himself admits, most of the principles "focuses heavily on the User Interface (UI)" because "the pixels on the screen are still a huge part of the

customer experience with digital products" (p. xx). Put in this context, the book is less a comprehensive examination of UX principles than it is a series of useful principles for designing digital products.

Given these caveats, it's possible the book should have been entitled *101 Digital Product Design Principles*. Regardless, the real value of this book is the near encyclopedic reference to actual UX research, particularly as it intersects with UI design. Each principle included targets a specific UI element (Principle 29 that focuses on hamburger menus, p. 117) cites data by a UX expert to ground it. In this way, the principles double as best practices grounded in research with actual users.

What *101 UX Principles* does for UX professionals, and anyone involved in any element of product design, then, is to provide a large list of working assumptions for creating user interfaces. There are always limitations to how involved users can be in product design. Having a series of principles to guide the creation of initial prototypes, prototypes that can then be rigorously tested with actual users, will give any professional a huge head start. UX experts may quibble with some of the principles listed, but this reviewer found them to be valid starting points for avoiding some of the worst issues with UIs that continue to plague many digital products even to this day.

Guiseppe Getto

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Strategic Content Design: Tools and Research Techniques for Better UX

Erica Jorgensen. 2023. Rosenfeld Media. [ISBN 978-1-959029-57-1. 320 pages, including index. US $54.99 (softcover).]

Strategic Content Design: Tools and Research Techniques for Better UX is a much-anticipated book for professionals like me who work at the intersections of content strategy and user experience (UX). Content design has been spoken about by practitioners for several years now, but this is the first full-length book on the topic. With newer professions like UX writing emerging, the book is also timely for people trying to launch careers at the intersection of creating digital products and crafting content.

One potential shortcoming of the book, however, is that it doesn't begin by defining this emerging area. Perhaps this is the academic researcher in me, but I would have loved to start the book with a definition for content design that I could use to fully grasp the tips throughout the book. That definition is certainly present in an appendix that begins on page 262, where the author defines content design as "the art and science of determining what specific content should appear in a user experience, and where and when it should appear" (p. 264). This clear, simple definition is useful to readers, regardless of its placement.

The real focus of Erica Jorgensen's book, however, is what she calls content research, a practice that "involves asking your customers or audience for focused feedback on your content—for example, what they like, what they don't like, and why—and then using that feedback to improve your content" (p. 4). The book can thus largely be seen as a primer in how to conduct this kind of research and how to leverage it for the improvement of an organization's content.

The tips for conducting content research are quite comprehensive and range from how to measure content clarity (p. 35) to how to define content research goals (p. 97) to crafting research questions (p. 147), analyzing research results (p. 167), and applying these results to business goals (p. 235). The real value of *Strategic Content Design* is this practical, hands-on approach to gathering feedback from users to improve content, which has long been a pain point for many content professionals. The book contains everything a practitioner or researcher may need to assess, analyze, and improve the state of content by soliciting feedback from users.

Seen in this light, any professional seeking to gather user feedback on content will find much to enjoy in *Strategic Content Design*. This could include practitioners seeking to add content research to their regular workflow or who are struggling with ineffective content, as well as researchers seeking to assess content in various forms and teachers seeking to introduce learners to the emerging content design profession.

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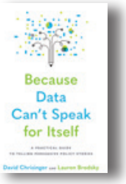
Because Data Can't Speak *for* Itself: A Practical Guide to Telling Persuasive Policy Stories

David Chrisinger and Lauren Brodsky. 2023. Johns Hopkins University Press. [ISBN 978-1-4214-4584-7. 136 pages, including index. US$22.95 (soft cover).]



Because Data Can't Speak for Itself: A Practical Guide to Telling Persuasive Policy Stories by David Chrisinger and Lauren Brodsky is a highly beneficial guide for writers who want to convey data-driven information to their readers effectively. The book emphasizes the importance of writing with data, not just about data, to make a lasting impact.

The book is well-organized into three parts: People, Purpose, and Persistence. Part I, People, highlights the connection between data and people (p. 24), emphasizing that quantitative data alone may not always provide insights into the reasons behind certain phenomena (p. 21). Part II, Purpose, focuses on developing better research questions to create more interesting and accurate stories. It also outlines the three primary objectives of an effective story: understanding and describing the situation, determining the best reforms or interventions, and suggesting the next steps to address challenges (p. 35).

Part III, Persistence, underscores the significance of integrity in data-driven writing. Instead of pretending that data has no limitations, the authors encourage writers to be honest about the data's scope and offer human interpretations. This approach prevents overstatement of the data's meaning and maintains credibility with the reader.

Because Data Can't Speak for Itself contains 32 tips to help writers craft more effective data-driven narratives. Some key sections highlighted in the review include the importance of asking better research questions (p. 36), avoiding unnecessary attribution (p. 87), and using concise language to explain complex concepts (p. 95).

In Tip #17, the COVID-19 data story (p. 61) shows a discrepancy between data and real stories. As a technical writer, it helped me understand how to deliver data information more effectively to my readers and the importance of the context, not only data itself. This book appears to provide valuable insights and guidance on data information.

Overall, I commend the book as a practical handbook suitable for writers in data-driven environments, evidence-based researchers, policy writers, marketers, and storytellers. The inclusion of all 32 tips in one place (pp. 107–113) serves as a helpful reference for writers to check and improve their writing journey.

Sam Lee

Sam Lee is an STC member and a Policies & Procedures SIG manager. Sam has a Master of Technology Management, a Master of Electrical Engineering, and a Technical Writing Certificate. He is currently a Senior Electrical and Avionics System Engineer, where he supports avionics systems certification and writes aviation-related documentation.

Strangely Rhetorical: Composing Differently With Novelty Devices

Jimmy Butts. Utah State University Press. [ISBN 978-1-64642-281-4. 221 pages, including index. US$24.95 (softcover).]

Strangely Rhetorical: Composing Differently With Novelty Devices by Jimmy Butts discusses strangeness as a lens for rhetoric and composition. He declares that our culture is constantly hunting for novelty and strangenesses [sic]. In this book, strangeness is the measure of difference or distance between relations. He says that it "offers similarities and differences, helps us perceive when things are more or less alike; it builds tension and creates attraction and repulsion" (p. 9).

In Chapter 3, How Strangeness Works, Butts relates an explanation from Christopher Tindale about rhetorical figures. They are "devices that use words to make some striking effects on an audience.…Whether we are referring to figures in the form of tropes…or schemes…, they grab us and help us take notice by making language…strange" (p. 59).

Of the hundreds of rhetorical figures in existence, Butts chose seven that he feels "can be executed to surprising effect across a number of old and new media" (p. 103). Using the utterly apropos mnemonic STRANGE, they are:

- **Shapeshifting.** Transforming an entire original form that retains its reference back to the original arrangement (Neptune's son Proteus).
- **Time travel.** Speeding up, slowing down, reversing, or skipping a text's linear chronology. A composition that moves back and forth by rearranging the order of events illustrates time travel.

- **Replacement.** Putting one component in place of another in a part of a text. Examples are metaphors and euphemisms.
- **Addition and subtraction.** Adding something where it would normally not be or taking something away. Butts uses the Headless Horseman as an example.
- **Negation.** Inverting text by using the negative. In an appropriate turn of events, Butts does not provide a theoretical introduction to this topic as he did for the others.
- **Glossolalia.** Using foreign or unintelligible language to communicate an unrecognizable form (Pythia, the Oracle at Delphi).
- **Exponentiation.** Amplifying or minimizing something that would typically be within normative measurements, as with hyperbole.

In this reviewer's opinion, what sells *Strangely Rhetorical* are the seven strange projects that correspond to each of the rhetorical figures. For example, in reference to time travel, Butts suggests sharing your personal history (briefly), but changing three details about your past that creates an alternate history. For exponentiation, he challenges you to create the ____-est thing in the universe, worthy of Guinness World Records.

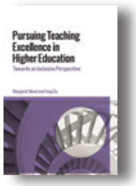
If you want to tap into the novel and unusual to create striking compositions, pick up a copy of *Strangely Rhetorical* to understand why strangeness matters.

Michelle Gardner

Michelle Gardner is a copywriter and content editor in the life sciences industry and the technology sector. She has a bachelor's degree in Journalism: Public Relations from California State University, Long Beach, and a master's degree in Computer Resources and Information Management from Webster University.

Pursuing Teaching Excellence in Higher Education: Towards an Inclusive Perspective

Margaret Wood and Feng Su. 2023. Bloomsbury Academic. [ISBN: 978-1-350-21669-3. 174 pages, including index. US$39.95 (softcover).]



What do Margaret Wood and Feng Su (who are university teachers in the United Kingdom) mean when they discuss what they call an inclusive perspective? In their understanding, they include the perspective of various stakeholders interested in educational excellence. The stakeholders include students, parents, employers, academics, and educational institutions—each getting a chapter in *Pursuing Teaching Excellence in Higher Education: Towards an Inclusive Perspective*.

The authors apply this attempt at inclusivity toward teaching excellence which they argue is poorly understood and poorly defined. They attempt in their book to better define excellence in higher education. They do this by looking at an understanding of the role and purpose of higher education. The authors argue that by looking at inclusive perspectives, they can get a valuable understanding of the value of higher education and move toward excellence.

To give an idea of what kinds of issues the authors discuss, consider from the academician's viewpoint the following question as it relates to academic excellence: Is it possible to excel in both teaching and research (p. 55). From the student's viewpoint, the authors ask the question relating it to excellence: Does teaching excellence focus too much on teaching and not enough on the role of the learner and learning (p. 76). The authors ask equally interesting questions for all the perspectives and stakeholders discussed.

The authors even look at what academic excellence means in not just the United Kingdom. For example, researchers in Russia indicate that excellence has a narrow definition (p. 21). Excellence in Russia shows research is more important than teaching. This perspective gives an even more insightful glimpse on how to think about excellence in higher education.

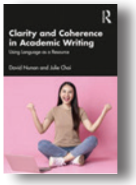
Students, parents, teachers, researchers, policy makers at academic institutions, employers, and anyone interested in the topic of academic excellence could find *Pursuing Teaching Excellence in Higher Education: Towards an Inclusive Perspective* to be a valuable resource and perspective on what it means to be academically excellent today. We can also as a society look at this book to help examine the purpose of academic institutions and how to make these institutions reflect the interests of various stakeholders providing an inclusive perspective.

Jeanette Evans

Jeanette Evans is an STC Associate Fellow; active in the Ohio STC community, currently serving on the newsletter committee; and co-author of an *Intercom* column on emerging technologies in education. She holds an MS in technical communication management from Mercer University and undergraduate degree in education.

Clarity and Coherence in Academic Writing: Using Language as a Resource

David Nunan and Julie Choi. 2023. Routledge. [ISBN 978-1-0320-1559-0. 212 pages, including index. US$34.95 (hardcover).]



Consider this way-out suggestion: Every teacher of writing—no matter *what* kind of writing they're teaching—should write a novel, before they start teaching. This will give you a much better feel for what language can really do…the linguistic mountaintops and depths of the sea you are able to reach. Think of language as your Archimedes fulcrum to pry into everything, from physics to poetry.

Clarity and Coherence in Academic Writing: Using Language as a Resource in general provides an excellent summary of how to "humanize" academic prose; how to make it more interesting and appealing. In other words, how to connect with the reader.

The authors' analysis is often brilliant and deep: *so* deep that it sometimes sinks to the bottom of the barrel, or the brain. In other words, so detailed that it becomes hard to apply. And sometimes, just the opposite: giving a long list of details but not expanding on them; for example, not providing useful examples.

A case-in-point: The book contains an insightful 20-page chapter on Figurative Language. It points out that this can pose serious problems even for advanced second language users, since some figures of speech are not even recognized as such. Take the following example: "*Data suggests that the economy will shrink in the second quarter*." Data here is being used figuratively: "Data don't suggest anything…because data don't (or doesn't) speak (or write). Nor does it imply or indicate" (p. 125). The author is attributing a human quality to a nonhuman entity. Which is a definition of personification.

Figures of speech are much more pervasive than we think (p. 123), and probably come in different forms. *Analogies*, for example, are especially good for conveying the feel of statistical information, such as a NASA spokesman explaining the amount of information NASA handles in one year (10 bits) as equal to 100 million Sears catalogs. Likewise, *animation* is surprisingly common in biology and chemistry textbooks, as in the following: "The oak embarked *on a journey* of continued growth. Cells divided repeatedly, grew together, and increase in diameter." And metaphors run deeper than we think. Neuroscientists have found they actually activate those areas of the brain connected with the sights, sounds, and smells involved.

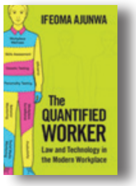
Sometimes, the topic is given too brief a treatment. In the case of punctuation, just one page (p. 23f), whereas a book that I authored on the technique in nonfiction devotes 8 pages to the topic. *Clarity and Coherence* is designed for students who are learning to write academic prose, such as scholarly articles and dissertations. Those students include native and nonnative speakers of English. Regular "newspaper English" is hard enough for the second language student. Academic English, with its pre-Victorian syntax and phonemics, is a journey without an end. Which, of course, is one of the things that makes the language so fascinating.

Steven Darian

Darian is a Professor Emeritus at Rutgers University. He has worked and studied in several countries. Steven's Ph.D. is in Applied Linguistics from New York University. Several examples in the review are taken from the second edition of Steven's book: *Technique in Nonfiction: The Tools of the Trade*.

The Quantified Worker: Law and Technology in the Modern Workplace

Ifeoma Ajunwa. 2023. Cambridge University Press. [ISBN 978-1-316-63695-4. 462 pages, including index. US$34.99 (softcover).]



The Industrial Revolution produced a shift from small, home-based, master-apprentice craft shops to large, impersonal factories that redefined human relationships in purely quantitative and functional terms. The efficiency expert Frederick Taylor formalized this shift into "scientific management" (p. 4) by isolating and redistributing complex, single-worker skills into simplified steps anyone could replicate. The worker no longer built a wheel by himself; now each step was performed by a different individual, with a manager observing and timing the worker with a stopwatch and tallying the number of units produced. The "mission to improve efficiency" soon "developed into an ideology" (p. 61) whose power has exploded through information technology, resulting in a workplace dominated by increasingly intrusive, automated surveillance systems that replace humans with "mechanical managers" (p. 2).

These technologies “erode worker personhood” (p. 30) by turning employees into “data doubles” (p. 265) that managers evaluate instead of the real employee, with the system itself increasingly replacing the manager’s decisions. Automated surveillance has become ubiquitous: it includes logging keystrokes, monitoring email, capturing web page views, requiring “wearable” data collectors, implanting RFID chips, and wearing exoskeletons. It has even “begun to encroach on the home” (p. 172), creating a “digital panopticon” (p. 9) that enables “perpetual and intimate surveillance” (p. 174) across an “unbounded workplace” (p. 244).

Because software reflects the decisions and prejudices of its creators, and “learns” through repetition, systemic bias increases over time. And because it is impossible to write software that completely avoids inherent human biases (p. 80), regulation is necessary to ensure “algorithmic-derived employment decisions are in line with anti-discrimination laws” (p. 77).

A solution would require algorithms to include employees in “the design of the data program” (p. 291); reflect “‘privacy law and property law’ rooted in ongoing employee data and value rights” (p. 291); and designate employers as “‘information fiduciaries’” (p. 291) responsible for ensuring the continuing fairness of the system. Such “*concurrent regulation*” would unite “industry regulations” with “governmental legislation” (p. 351) and transform the algorithm into a “broker” mediating the explicit responsibilities of both employer and employee to ensure “fairness” as “part of the design from the onset” (p. 380).

With this change, employers would have to exercise their “duty of care” (p. 361) by working with employees to design a fair system; implementing periodic audits to remedy “disparate impact” (p. 372); and recognizing that the legal principle of *discrimination per se* transfers the burden of proof to employers, who must now prove they did not discriminate. Other remedies include government or third-party certification systems, sequestering “demographic information” (p. 376) from hiring managers, and including mutually agreeable data capture rules in union contracts.

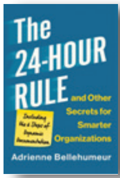
Ifeoma Ajunwa’s practical solution would reduce intrusive, automated surveillance of employees, minimize (if not eliminate) discrimination and bias, re-establish boundaries between work and home, and restore the humanity of workers too long dehumanized by obsessive and excessive quantification.

Donald R. Riccomini

Donald R. Riccomini is an STC member and Emeritus Senior Lecturer in English at Santa Clara University, where he specialized in engineering and technical communications. He previously spent twenty-three years in high technology as a technical writer, engineer, and manager in semiconductors, instrumentation, and server development.

The 24-Hour Rule and Other Secrets for Smarter Organizations

Adrienne Bellehumeur. 2023. Matt Holt Books. [ISBN 978-1-6377-4283-9]. 242 pages. US$28.00 (hardcover).]



Do you know that your short-term memory is like having *seven* Post-it® Notes stored at the front of your brain? Adrienne Bellehumeur, author of *The 24-Hour Rule and Other Secrets for Smarter Organizations*, cites this finding of noted psychologist George Miller. She states, “Seven items is not a lot of space for all the Post-it Notes you need for life!” (p. 57). Her book teaches you how to get information out of your head and store it effectively.

In Part 1, *The Foundation*, Bellehumeur explains how we all do documentation, including proposals, memos, spreadsheets, and email. However, we have little understanding of how to apply skills of documentation to turbocharge our effectiveness.

As a consultant specializing in business analysis, audit, and internal control programs, she found that doing something with information within 24 hours of hearing it is the foundation to working faster, smarter, and more nimbly. For example, following a team meeting, she suggests writing down three main points that were mentioned. This 24-hour rule is the core concept of her six-step approach to dynamic documentation.

In Part 2, *The 6 Steps of Dynamic Documentation*, she describes the six steps that allow you to take control of your work to achieve your goals.

1. **Capturing.** Get information out of your head and store it using journaling, mind mapping, blogs, action items, and project lists. She explains what information to capture and what not to capture.
2. **Structuring.** Structure the information by shuffling, moving, pulling together, and looking

for patterns. During this step, state the purpose by defining the "why."

3. **Presenting.** Presenting is what "sells" your information to your team.
4. **Communicating.** Of the various communication vehicles, communicating by email is a better influencer than social media to sell your ideas.
5. **Storing and Leveraging.** When storing and leveraging your content, you need fewer documents than you think. She recommends you trash documents that are ROT (redundant, outdated, and trivial).
6. **Leading and Innovating.** Looking to the future involves leading and innovating. Bellehumeur states, "Companies now need documentation to train their staff on how systems, processes, and protocols work. Thinking of your staff as permanent fixtures is dangerous" (p. 164).

In Part 3, *Dynamic Documentation in Action*, she describes how to implement dynamic documentation in your workplace and your home. Her final chapter, *Applying Dynamic Documentation at Home*, makes her book an even more valuable resource. As a working mother of three small children, Adrienne is aware of the types of household tasks requiring documentation, such as meal planning, exercise, cleaning, bill management, vacation planning, and family appointments.

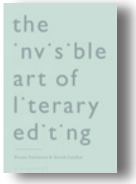
As a technical writer, I highly recommend Adrienne's book as a reference for your bookshelf. In fact, I have replaced my other books by well-known productivity authors with her book as my go-to reference. Find out more about Adrienne's work and her articles at www.bellehumeurco.com.

Rhonda Lunemann

Rhonda Lunemann is an STC senior member and a technical writer with Siemens Digital Industry Software. She serves on the STC Twin Cities chapter's Program committee and is a member of the MN (Minnesota) Bot Makers.

the invisible art of literary editing

Bryan Furuness and Sarah Layden. 2023. Bloomsbury Academic. [ISBN 978-1-350-29648-0. 136 pages. US$19.95 (softcover).]



How do editors learn their craft? How do instructors train editors? As of a July 2023 update, Poets & Writers lists 169 universities that produce literary journals (https://www.pw.org/content/literary_journals_us_mfa_programs). Faculty who manage these journals have a complex job of teaching students the various types of editing on top of topics ranging from print and online production to social media to sales and marketing—all without a textbook, until now. *the invisible art of literary editing* fills a crucial part of this void by focusing on the editing of creative prose in literary journals.

The book contains three parts, organized to follow the editing process (p. 1), including a brief series of discussions around the roles and responsibilities of editors, followed by best practices for communicating with authors, and ending with several substantive and interesting case studies from editors at a range of journals.

Part One is a short twenty pages that outlines the typical process for handling submissions, from creating submissions guidelines to determining an aesthetic to reading the slush pile. This part could be expanded to examine the practical side of culling submissions, perhaps by providing ten to twenty first paragraphs as an exercise to see how quickly students can skim and decide which works they might be interested in and why, thus turning the reading process into lessons on craft that tie together the information on aesthetics and acquisitions. Also, the sections "Deeper Consideration" and "All-Staff Discussion" (pp. 16–17) could include activities on developing the journal's editorial aesthetic. What do students think of second person point of view, for example? What about difficult content and trigger warnings? The authors lost some opportunities here for classroom activities and connecting the practical lessons in Part One.

the invisible art of literary editing excels in providing sample texts with editing prompts, all of which could work well as classroom activities or homework and as exemplars for any course on editing. The publisher should offer digital versions so that students can practice marking texts in tools like Google Docs and Microsoft Word. (Faculty often mistakenly believe

students know how to do this already.) Despite being a short book, I also wish it had an index.

I most appreciate how the authors incorporate humor throughout. In discussing how to write rejection letters, they caution against including sale offers or subscriptions: "When someone gets rejected, they're not in a mood to buy anything but Häagen-Dazs and Wild Turkey" (p. 25). The section "Editing with a Heavy Hand," aims to help "timid" entry-level editors, those who tend to edit lightly, by inviting them to dominate a practice revision. The authors describe how Gordon Lish took a "heavy hand" to Raymond Carver's fiction, touching on the controversy surrounding Lish's drastic approach. Their humorous instructions for the exercise? "Lish the hell out of it" (p. 114).

the invisible art of literary editing is a compact book at a very reasonable price that gives faculty advisors a starting point for teaching the next generation of editors.

Kelly A. Harrison

Kelly A. Harrison, MFA, teaches technical communication at Stanford University. Formerly, she taught a range of writing courses at San José State University and worked in various roles for software companies. Kelly is the Associate Editor for *West Trade Review*, and during her MFA she was the managing editor for *Reed Magazine*.

Customer Experience Analytics: How Customers Can Better Guide Your Web and App Design Decisions

Akin Arikan. 2023. Routledge. [ISBN 978-1-0323-7076-7. 326 pages, including index. US$39.95 (softcover).]

Customer Experience Analytics: How Customers Can Better Guide Your Web and App Design Decisions is a detailed introduction to using experience analytics to reduce user frustration and increase engagement. This book would be useful to marketing and User Experience (UX) professionals, as well as anyone who has influence over product design.

Akin Arikan has extensive experience in digital analysis, which shines through in his book. He is clearly passionate about improving user journeys through digital products. The book makes a good case for leveraging customer experience analytics to improve customer engagement and conversion (sales) besides traditional digital metrics. Numerous case studies illustrate how experience analytics measurably impacted percentages and dollar amounts that were being lost due to customer frustration or that were gained through innovation.

Part I explores what makes a good user experience: the user's journey through the product should be inspiring, rewarding, and seamless (p. 16). The digital team should spot problem areas quickly and identify areas for potential innovation. Traditional digital analytics can capture simple facts such as traffic and clicks, and it can evaluate the effect of potential design changes using A/B testing, however, "[d]espite all the bar charts, trend charts, and click behavior numbers, nobody can still hear a customer's rage on a site" (p. 28). Incorporating experience analytics gives better insight to the estimated 90% of user behavior that happens between clicks and taps (p. 39). The final chapters of Part I go into detail about the types of experience metrics including heatmaps, struggle and error metrics ("rage-clicks"), and more.

Part II gets into practical case studies of using experience analytics to solve common problems in every area of the user journey funnel, from the initial landing on the home page through transaction completion and beyond. Arikan introduces a quick cheat sheet for interpreting the case studies called the C-SUITE (Challenge, Surface, Understand, Impact, Test, and Evaluate) (p. 108). Following each case study, a chart shows the C-SUITE takeaways exploring how the company started with a problem area identified by analytics, explored the true frustration, and implemented and tested a solution. Common themes among the case studies include important reminders for all designers: put vital information above the fold so customers do not have to scroll to see it, design mobile sites with mobile-specific contexts in mind and prioritize accessibility to reach the widest number of customers.

Part III looks forward to the future, outlining how to use experience analytics to predict future customer behavior and exploring potential uses of artificial intelligence for customer service with chatbots, digital assistants, and wearable devices.

Overall, *Customer Experience Analytics* is neither too broad or too in-depth for the average businessperson and serves as a guide for incorporating a wide variety of analytics to drive website and app

design as well as increase company revenue. I would recommend it to anyone on the digital team of a company from marketing and UX to management and technical analysts.

Bonnie Winstel

Bonnie Winstel is the Assistant Manager of Software Development for Book Systems, Inc. in Huntsville, Alabama. She received her master's degree in English and Technical Communication at the University of Alabama-Huntsville in 2013.

Immersive Content and Usability

Preston So. 2023. A Book Apart. [ISBN 978-1-952616-28-0. 132 pages, including index. US$39.00 (softcover).]

Immersive Content and Usability surfaces the considerations that ought to be top of mind for content strategists working with virtual reality (VR). I picked up this book interested to hear the implications for information architecture that come with content immersion; that is, of using language to establish a sense of presence in virtual experiences.

As Preston So explains, content is "immersive" when it exemplifies four key characteristics (pp. 6–7). Firstly, such content is based in the physical world, not trapped behind a screen. This physicality requires content designers to pay special attention to real-world usability testing, to avoid embarrassing mishaps such as placing digital signs in unreadable locations or inundating a user with multiple location-based notifications if they stumble into the intersection of two beacon ranges (p. 51). Secondly, immersive content normally involves signage or labelling, which means it inherits non-immersive content best practices, such as using succinct wording and legible fonts. However, designers must determine whether to deliver "embedded content" or "environmental content," which So explains well with the simile, "Embedded content in VR is like the speedometer or fuel gauge in a car, while environmental content is the signage and billboards that whoosh by in the windshield" (p. 10). Another key differentiator for immersive content is its response to movement, allowing designers to attune content to positional or orientational changes in space (p. 8). Finally, immersive content operates in three dimensions, necessitating the use of devices such as VR headsets. The detailed graph provided on p. 33 clearly demarcates the various "content zones" for VR, providing specific measurements for how content should be positioned so that it fits into the "Goldilocks zone" for maximum usability. It's time-saving research like this where the book provides most of its value.

Something I appreciate about *Immersive Content and Usability* is that it foregrounds accessibility considerations whenever discussing usability. However, So has little empathy for designers who allow usability oversights into their products, referring to a company who employed biometric data to render a digital avatar for his wheelchair-user colleague that mistakenly portrayed her as a non-wheelchair-user as "blatantly ableist and oppressive" (p. 117). While I understand So's frustration, personally, I feel he dishes out such invective a bit too readily. One could make the case that his own book is ableist and oppressive against blind or dyslexic people for not yet being available in audiobook format, for example. Achieving full accessibility is a laudable yet lofty goal that necessarily takes time, so it is unfortunate that So uses such accusatory and demeaning language towards those whose experience in this subject does not match his own. Most of his writing, however, stays pragmatic and enlightening, imparting the message that virtual reality is an environment that designers will find is brimming with both peril and opportunity.

Josh Anderson

Josh Anderson, CPTC, is an Information Architect at Paligo. Josh was an English teacher in Japan and an SEO Specialist in the Chicagoland area before earning a Master of Information at the University of Toronto.

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Sean C. Herring, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Sean Herring at SeanHerring@MissouriState.edu.

"Recent & Relevant" does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers' addresses, covering nearly all the articles we have cited, appear in *Ulrich's international periodicals directory*.

Audience analysis

Seeking out the stakeholders: Building coalitions to address cultural (in)equity through arts-based, community-engaged research

Wertz, O. M., Workman, K., & Carlson, E. B. (2023). *Communication Design Quarterly, 11*(2), 18–27. https://doi.org/10.1145/3592356.3592359

"Artists are an important, but under-recognized, aspect of rural community growth. This research article details a collaborative project between a statewide arts organization and academic researchers in West Virginia designed to document the needs of under-represented artists across the state." In the article the authors present a "theoretical approach that meshes stakeholder and standpoint theory" and a methodology of "participatory and arts-based methods such as asset-mapping and collage-based listening sessions. Ultimately, [the authors] provide a model for others interested in research projects that explicitly prioritize coalition-building throughout a project and demonstrate how cultural (in)equity shapes multiple facets of community life."

Lyn Gattis

Climate & Environment

Expanding the scope and scale of risk in TPC: Water access and the Colorado River Basin

Pflugfelder, E., Amidon, T., Sackey, D., & Richards, D. (2023). *Technical Communication Quarterly, 32,* 224-241. https://doi.org/10.1080/10572252.2023.2210194

"Building from a recent history of how technical and professional communication has addressed risk, we argue that the spatial and temporal frames through which the field has encountered risk must be confronted in working toward climate justice. We offer topoi that can be deployed to trace these interconnections and apply them to The Law of the River in the Colorado River Basin to illustrate how case studies can demonstrate the unequal distribution of climate risk."

Rhonda Stanton

POWHR to the people: Fighting for climate justice and opposing the Mountain Valley Pipeline in Appalachia

Murray, S. P. (2023). *Technical Communication Quarterly, 32,* 270-275. https://doi.org/10.1080/10572252.2023.2210171

"This case study explores the rhetorical tactics and strategies of grassroots environmental efforts to oppose the Mountain Valley Pipeline (MVP) in Appalachia. I emphasize the use of epideictic rhetoric by POWHR in their advocacy for climate justice."

Rhonda Stanton

Collaboration

Collaborating successfully with community partners and clients in online service-learning classes

Dumlao, R. J. (2023). *Journal of Technical Writing and Communication*, 53(3), 218–239. https://doi.org/10.1177/00472816221088349

"Teaching online students to collaborate effectively with community partners and to solve problems through service-learning projects are "on trend" topics for technical communication faculty. This article presents collaboration specifics as well as the author's Collaborative Communication Framework (CCF) to show the types of communication needed to work well with community partners/clients in service-learning…"

Anita Ford

Communication

A story about speaking up: Mediation effects of narrative persuasion on organizational voice intentions

Gans, R., & Zhan, M. (2023). *International Journal of Business Communication*, *60*, 865–891. https://doi.org/10.1177/23294884221091275

"Despite well-recognized organizational benefits when speaking up is normative employee behavior, employees often remain reluctant to speak up in organizational settings. To date, strategies to promote speaking up have largely focused on policy and environmental factors, with scant attention paid to development of successful promotional messages. To explore message strategies for promoting speaking up, [the authors] randomly assigned participants ($N = 615$) to four different message conditions and measured their voice intentions. Persuasive strategies incorporating storytelling were more effective in promoting speaking up than strategies without the storytelling component, with narrative transportation as a mediating factor. Transportation effects were inversely correlated with need for cognition and work engagement, suggesting the utility of story-based message strategies for impacting employees most likely to resist speaking up. This study contributes to the field as one of the first to connect the mechanisms of narrative persuasion to the effectiveness of storytelling in organizational communication."

Katherine Wertz

We need to talk about how we talk about accessibility

Horton, S., & Lauridsen, E. (2023). *Journal of User Experience, 18*(3), 105–112. [doi: none]

This essay urges user experience professionals and researchers to choose words carefully when communicating about accessibility and disability inclusion. The authors point out that "[t]he words we use shape our communities. They can drive positive change or cement us in outmoded and unproductive ways of thinking and acting. And they are contagious, spreading throughout our communities, embedding themselves in our systems, defining our behaviors, and influencing outcomes. When the words and expressions we use to talk about accessibility convey prejudice and reinforce stereotypes, whether explicitly or implicitly, they can feed discriminatory behaviors, such as minimizing or disregarding accessibility, thereby preventing disabled people from using digital products." The essay presents "a series of vignettes, loosely based on real-life events, as a narrative device to illustrate how language reveals unseen but nonetheless solid barriers. . . . Following each vignette, [the authors] explore how the language could be problematic and counterproductive in achieving the aims of [the user experience] profession. [The authors] conclude with some resources for refactoring our accessibility discourse, individually and collectively, so that we can better support accessibility and disability inclusion in our digital world."

Lyn Gattis

Design

Community engaged researchers and designers: How we work and what we need [Introduction to special issue on justice-oriented communication design]

Amidon, T. R., Moore, K. R., & Simmons, M. (eds.). (2023). *Communication Design Quarterly, 11*(2), 5–9. https://doi.org/10.1145/3592356.3592357

"This introductory essay [in the first of two special issues on justice-oriented communication design] describes the need for clarity and openness surrounding community-engaged research projects, which comprise expertise, efforts, and experiences that often fail to make their way into traditional research accounts and articles." The articles in this issue provide "examples of agility and innovation for navigating the liminality of shifting positionality, for building transdisciplinary coalitions, and for pushing the boundaries of genre expectations in order to better document the slow labor of this work and the methodologies and practices that must be developed, adapted, and readapted to ethically, inclusively, and equitably accommodate the complexities of inquiry across community members, community organizers, and researchers, whose roles may shift and overlap in the pursuit of justice." The second special issue of *CDQ* on justice-oriented communication design is scheduled for fall 2023.

Lyn Gattis

Diversity

Disrupting textual regimes of climate disaster recovery governance through translation

Lee, S. (2023). *Technical Communication Quarterly, 32,* 254-269, https://doi.org/10.1080/10572252.2023.2210169

"Using data sets from ethnographic research, this article examines how language minorities navigate textual regimes in disaster recovery procedures governed by bureaucratic recovery technologies. To discuss the impacts of Western climate governance regimes and alternative disaster recovery communication, this article traces rhetorical practices of transnational multilingual communities of color around a disaster relief program. I argue that community-engaged translation practices operate as the locus of rhetorical strategies against disaster recovery injustice."

Rhonda Stanton

(Re)locating the decision makers in ecotourism: Emphasizing "Place" and "Grace" in a global industry's DEI efforts

Mathis, W. (2023). *Technical Communication Quarterly, 32,* 287-302. https://doi.org/10.1080/10572252.2023.2204139

"This article examines the role that reformed hiring practices and diversity, equity, and inclusion (DEI) initiatives within the global industry of ecotourism may (or may not) play in bringing multiply marginalized or underrepresented (MMU) voices to the forefront of environmental risk communication and sustainability efforts worldwide. Ultimately, the article argues that ecotourism companies should promote grace-based hiring practices to include marginalized knowledges of threatened ecosystems (places) in a company's decisions regarding sustainability."

Rhonda Stanton

Education

Calling BS on ChatGPT: Reflections on AI as a communication source

Sundar, S. S., & Liao, M. (2023). & Communication Monographs, 25(2), 165-180. https://doi.org/10.1177/15226379231167135

"The arrival of ChatGPT and other artificial intelligence (AI) writers has captured the popular imagination, but also raised grave concerns. What are the implications of the widespread deployment of such content generation technologies? How should we, as communication scholars, think about and study AI writing tools? We discuss these questions by reflecting on research highlighting the psychological effects of AI as a source

of communication. We identify key future research directions, including a redefinition of concepts like creativity, addressing major weaknesses of AI writers, and motivating design of better AI tools with an eye toward reclaiming human agency in the post-ChatGPT era."

Yvonne Wade Sanchez

Ethical issues

ChatGPT and large language models in academia: opportunities and challenges

Meyer, J. G., Urbanowicz, R. J., Martin, P. C., O'Connor, K., Li, R., Peng, P. C., ... & Moore, J. H. (2023). BioData Mining, 16(1), 20. https://doi.org/10.1186/s13040-023-00339-9

"The introduction of large language models (LLMs) that allow iterative "chat" in late 2022 is a paradigm shift that enables generation of text often indistinguishable from that written by humans. LLM-based chatbots have immense potential to improve academic work efficiency, but the ethical implications of their fair use and inherent bias must be considered. In this editorial, we discuss this technology from the academic's perspective with regard to its limitations and utility for academic writing, education, and programming. We end with our stance with regard to using LLMs and chatbots in academia, which is summarized as (1) we must find ways to effectively use them, (2) their use does not constitute plagiarism (although they may produce plagiarized text), (3) we must quantify their bias, (4) users must be cautious of their poor accuracy, and (5) the future is bright for their application to research and as an academic tool."

Yvonne Wade Sanchez

Health communication

Narratives about cancer: What metaphors can tell us about depressive symptoms in breast cancer patients

Pfeifer, V.A., Weihs, K.L., Lai, V.T. (2023). *Health Communication.* Advanced online publication. https://doi.org/10.1080/10410236.2023.2245989

"Metaphors are pervasive in cancer discourse. However, little is known about how metaphor use develops over time within the same patient, and how metaphor use and its content relate to the mental health of the patient. Here, [authors] analyzed metaphor use in personal essays written by breast cancer patients shortly after the time of diagnosis and nine months later, in relation to their depressive symptoms at both time points. Results show that metaphor use can provide important insight into a patient's current mental state. Specifically, patients who had no change in their depressive symptom levels used metaphors more densely after nine months. In addition, metaphor valence in the later essay was associated with depressive symptoms at study entry and nine months after. Lastly, [authors] observed a shift in metaphor reference pattern for different symptom trajectories, such that those who recovered from initially elevated depressive symptoms used fewer self-referencing metaphors and more cancer-referencing metaphors in their later essay. [This] work suggests that metaphor use reflects how a patient is coping with their diagnosis."

Walter Orr

Information management

Professionals' understanding of accessibility regarding business communication materials

Drye, S, L., Kelly, S., Woodard, T. (September 2023). Business and Professional *Communication Quarterly, 86* (3), 235-256. https://doi.org/10.1177/23294906221133068

"Inclusive practices for people with handicaps in America were mandated in 1990 beginning with

the Americans with Disabilities Act; yet according to this study, neither the ADA nor the current DEI conversations seem to have made the needed progress regarding accessibility of documents and visuals that would make these inclusive. Moreover, these inclusive practices have been found to benefit not only those with handicaps but also to "provide access for second language learners … or even just someone in a crowded or loud space," so these practices are more fully inclusive. This study of business professionals found that "roughly a third of the respondents did not have enough awareness of accessibility to guess at a definition, and after being presented with a definition, roughly half of respondents could not guess at methods of preparing accessible business documents." The study found differences by age of respondents and by academic major. "Business majors were less likely than other majors to be able to identify disability-related methods of making a report or visual accessible. Implications for business communication education are discussed." Because of the intended audience of this journal, this article is geared toward business instructors; however, the need to create accessible materials is even more broadly relevant to achieve goals of inclusion."

Diana Fox Bentele

Instructions

The challenges and opportunities of AI-assisted writing: Developing AI literacy for the AI age

Cardon, P., Fleischmann, C., Aritz, J., Logemann, M., & Heidewald, J. (2023*). Business and Professional Communication Quarterly*. https://doi.org//10.1177/23294906231176517

"AI may significantly disrupt the teaching and practice of business communication. This study of 343 communication instructors revealed a collective view that AI-assisted writing will be widely adopted in the workplace and will require significant changes to instruction. Key perceived challenges include less critical thinking and authenticity in writing. Key perceived benefits include more efficiency and better idea generation in writing. Students will need to develop AI literacy—composed of application, authenticity, accountability, and agency—to succeed in the workplace. Recommendations are provided for instructors and administrators to ensure the benefits of AI-assisted writing can outweigh the challenges."

Yvonne Wade Sanchez

Intercultural communication

A communicational disconnect: Establishing superordinate identities in climate communication through transgenerational responsibility

Lehnert, J., Doody, S., Steinburg, J., & Mehlenbacher, A. (2023). *Technical Communication Quarterly, 32,* 303-309. https://doi.org/10.1080/10572252.2023.2210204

"This paper explores opportunities for intergenerational communication to foster collective climate action and justice. While climate change communication can be framed as a site of intergenerational conflict and blame, we consider how the concept of superordinate identities offers rhetorical possibilities for generational coalition building to ultimately facilitate joint climate action."

Rhonda Stanton

Leadership

Designing public identity: Finding voice in coalitional technical writing with Black-led organizations

Grant, C., & Walker, D. (2023). *Communication Design Quarterly, 11*(2), 10–17. https://doi.org/10.1145/3592356.3592358

"This experience report offers an applied example of coalitional communication design, written collaboratively by a white faculty member for a student grant writing program and a Black executive director of a community organization. Highlighting the needs, thought processes, and practical considerations of doing antiracist technical communication work collaboratively

from varied identity positions, [the authors] detail an ongoing effort to redesign a Black community organization's public voice to honor Black humanity and communal healing. This example spotlights the possibilities of coalitional technical writing that deeply engages with and supports community needs, one way to meet the challenge of TPC's social justice imperative."

Lyn Gattis

The influences of open communication by senior leaders and legitimacy judgments on effective open innovation

Wang, C., Cardon, P. W., Li, C.-R., & Li, C.-X. (2023). *International Journal of Business Communication*, *60*, 912–931. https://doi.org/10.1177/2329488420982061

"Firms increasingly recognize open innovation as a key aspect of their innovation strategies. This study of 200 open innovation managers showed that open internal communication by senior leaders drives higher legitimacy judgments, which in turn drives open innovation success. Further, legitimacy judgments mediate the relationship between open internal communication and open innovation success. Open external communication by senior leaders moderates the indirect relationship between open internal communication and open innovation success, with more open external communication strengthening the influence on open innovation success. These results suggest firm-level open communication by senior leaders is essential for project-level open innovation success."

Katherine Wertz

Political discourse

Slow civic violence and the removal of USPS mail sorting machines during the 2020 election

Sánchez, F. (2023). *Journal of Technical Writing and Communication*, 53(3), 175–197. https://doi.org/10.1177/00472816221074946

"This article combines historical research with demographic analysis and neoliberal/rhetorical critique to put forth the concept of slow civic violence—indirect injuries on civic process, particularly within marginalized communities. The author ties the United States Postal Service's (USPS) rationale for removing mail sorting machines during the 2020 election year to systemic moves that damage democratic participation. The author conducts an empirical analysis of where the USPS mail sorting machines were removed to show how neoliberal arguments in favor of cost cutting make voting by mail a more precarious and uncertain act primarily for those who reside in communities of color."

Anita Ford

Public relations

The hidden labor of sustaining community partnerships

Hartline, M. F. (2023). *Communication Design Quarterly, 11*(2), 44–49. https://doi.org/10.1145/3592356.3592362

This experience report discusses "the difficult, often hidden, labor of setting up, developing, and maintaining the relationships that are foundational to community-engaged research." The author draws on personal experiences in academia and community work to "illuminate the complexities of relationship building while detailing practical examples of how to build and sustain strong community partnerships through three core processes: establishing connections, following through, and growing trust."

Lyn Gattis

Toward a relational theory of employee engagement: Understanding authenticity, transparency, and employee behaviors

Jiang, H., & Shen, H. (2023). *International Journal of Business Communication*, *60*, 948–975. https://doi.org/10.1177/2329488420954236

"Based on the relationship management paradigm and the job demands-resources model, [the authors] proposed a relational theory of employee engagement integrating employees' immediate supervisors' authentic leadership behaviors and perceived transparent organizational communication as antecedents of employee engagement and contextual performance behavior and turnover intention as behavioral outcomes that engagement leads to. Employee survey ($N = 727$) results identified perceived transparent communication and employee engagement as key mediators between perceived authentic leadership and individual employee behavioral outcomes. [The authors'] study provided a fresh, interdisciplinary perspective to revisiting relationship management function, testing immediate supervisors' leadership exchange and an overall transparent organizational communication climate as both relationship cultivation strategies and supportive workplace resources. [The authors'] findings also reinforced the value of transparent organizational communication in cultivating relationships with and fostering engagement of an organization's stakeholders that prior literature called for more research about. In addition, it added more into the relatively limited but growing body of research on authentic leadership in association with organizational communication, engagement and other employee behavioral and organizational outcomes. [The authors] also discussed theoretical and practical implications of the study."

Katherine Wertz

Research

A Review of Miscarriage and Healthcare Communication in the United States

Lacci-Reilly, K.R., Brunner Huber, L.R., Quinlan, M.M., Hutchison, C.B., Hopper, L.N. (2023). *Health Communication*. Advanced online publication. https://doi.org/10.1080/10410236.2023.2245205

"Miscarriage is a pervasive and socioemotionally complex pregnancy complication. Evidence suggests that poor clinical management can worsen these experiences. Yet, assessments of healthcare communication during a miscarriage are limited and a systematic review of the literature is needed. This review identified and synthesized original research on miscarriage and healthcare communication in the United States from the past 20 years to identify existing knowledge gaps for future miscarriage research. The following databases were searched: PubMed, PsychINFO, and ERIC Database. Data were charted according to Arksey and O'Malley's Scoping Review Framework. Eleven articles were included in the review and three primary themes emerged: (a) patients overwhelmingly prefer patient-centered care; (b) miscarriage is often overmedicalized, which leads to poor communication; and (c) informed decision-making related to one's miscarriage can improve patient experiences. Several gaps were also identified, including studies seeking physician perspectives on miscarriage communication, evaluation of standard care guidelines, and studies evaluating diverse patients' perspectives. This review highlights the need for patient-centered care that utilizes compassionate and accessible language and promotes informed decision-making. Future research should use quantitative methodologies and longitudinal designs to build upon these findings and improve patient experiences of miscarriage."

Walter Orr

Making graduate student CER practices visible: Navigating the double-binds of identities, space, and time

Allison, L., Kalim, S., Maggio, C., & Schoettler, M. (2023). *Communication Design Quarterly, 11*(2), 38–43. https://doi.org/10.1145/3592356.3592362

"In this dialogue, four recently commenced PhD students discuss and thus expound upon how their community-engaged research shaped their methodologies and vice versa. The four authors explain how they each individually overcame the double-binds of identities, space, and time associated with graduate school and community partnerships. They conclude by detailing how, in overcoming these double-binds, they were able to enact community-engaged practices not only tied to their respective methodologies but also focused on equity and social justice."

Lyn Gattis

When failure is the only option: How communicative framing resources organizational innovation

Smith, W. R., Treem, J., & Love, B. (2023). *International Journal of Business Communication*, *60*, 976–999. https://doi.org/10.1177/2329488420971693

"Innovation is valuable for organizational success, yet it presents contradictions for workers who must choose between pursuing novel courses of action or practicing established strategy. One challenge is that many efforts at innovation are not successful, making workers reluctant to pursue novel projects. In this study, [the authors] seek to answer the question: How do individuals responsible for facilitating innovation in organizations communicatively construct and frame failure? Abductive analysis of interviews with 36 professionals in innovation-related roles reveal that these workers communicate in a way that frames the idea of failure in a way that bolsters innovation efforts. This framing is enacted through a variety of language tools, a mindset aligned with the frame, and the development of organizational strategy that communicatively supports this framing. The article argues that innovation failure is resourced via communicative framing as an asset that aids organizational learning. Overall, findings indicate that communication plays a central role in constituting innovation practices and facilitating change in organizations."

Katherine Wertz

Rhetoric

Respecting conversational norms improves reception of expert messages among unvaccinated individuals

McCrea, S.M., Thurmer, J.L., Helm, M.R., Erion, C.J., Krueger, K. (2023). *Health Communication. Advanced online publication*. https://doi.org/10.1080/10410236.2023.2243047

"The association of medical experts with politically left-leaning cities and states early in the COVID-19 pandemic may have exacerbated vaccine hesitancy in right-leaning states of the US. Criticism from outside experts violates rules of communication between social groups (i.e. an intergroup sensitivity effect), leading to rejection of messages promoting vaccine safety and efficacy. In two studies, [authors] document the effects of shared geographical group membership for medical expert messages promoting vaccination. [Authors] also found evidence that satisfying conversational norms against intergroup criticism reduces message rejection. Specifically, an invitation from ingroup political elites for a doctor to speak reduced the negative effects of unshared group identity."

Walter Orr

Scientific writing

The use and misuse of Indigenous science

Pflugfelder, E., Goodfriend, O., & Baker, C. (2023). *Technical Communication Quarterly, 32,* 276-286. https://doi.org/10.1080/10572252.2023.2210166

"Knowledge about the use of the term "Indigenous science" (IS) is valuable to technical and scientific communication in the larger goal of exposing colonial, appropriative legacies. Using rhetorical content analysis, we analyze 61 instances of IS in US-based news articles

and find that IS is often represented as an ongoing activity, connected to food production, and related to higher education activities. However, IS is rarely defined and Indigenous people are not always cited/quoted."

Rhonda Stanton

Social Justice

Community-driven concepts to support TPC coalition building in a post-Roe world

Novotny, M., Grobel, M., Davis, G., & Vesbit, J. (2023). *Communication Design Quarterly, 11*(2), 28–37. https://doi.org/10.1145/3592356.3592360

"As threats against reproductive autonomy increase nationally, coalition building serves as an essential practice to advocate for the needs of reproductive persons. This experience report focuses on the work of coalition building for those seeking access to alternative family building services and fertility treatments like in vitro fertilization, which rely upon the availability of donor embryo/s. [This] report sheds light on the often unseen moments essential to supporting community-driven coalitional efforts, identifies concepts to guide coalitional practice in technical and professional communication, and underscores the value of slowness in coalitional work despite the increasing threats limiting access to reproductive care."

Lyn Gattis

Teaching

Students' voices on generative AI: perceptions, benefits, and challenges in higher education

Chan, Cecilia Ka Yuk; Hu, Wenjie*. (2023). International Journal of Educational Technology in Higher Education* , Vol. 20 Issue 1, p1-18, 18p. https://doi.org/10.1186/s41239-023-00411-8

"This study explores university students' perceptions of generative AI (GenAI) technologies, such as ChatGPT, in higher education, focusing on familiarity, their willingness to engage, potential benefits and challenges, and effective integration. A survey of 399 undergraduate and postgraduate students from various disciplines in Hong Kong revealed a generally positive attitude towards GenAI in teaching and learning. Students recognized the potential for personalized learning support, writing and brainstorming assistance, and research and analysis capabilities. However, concerns about accuracy, privacy, ethical issues, and the impact on personal development, career prospects, and societal values were also expressed. According to John Biggs' 3P model, student perceptions significantly influence learning approaches and outcomes. By understanding students' perceptions, educators and policymakers can tailor GenAI technologies to address needs and concerns while promoting effective learning outcomes. Insights from this study can inform policy development around the integration of GenAI technologies into higher education. By understanding students' perceptions and addressing their concerns, policymakers can create well-informed guidelines and strategies for the responsible and effective implementation of GenAI tools, ultimately enhancing teaching and learning experiences in higher education. Highlights: This study focuses on the integration of generative AI (GenAI) technologies, like ChatGPT, into higher education settings. University students' perceptions of generative AI technologies in higher education were explored, including familiarity, potential benefits, and challenges. A survey of 399 undergraduate and postgraduate students from various disciplines in Hong Kong revealed a generally positive attitude towards GenAI in teaching and learning. Insights from this study can inform policy development around the integration of GenAI technologies into higher education, helping to create well-informed guidelines and strategies for responsible and effective implementation."

Yvonne Wade Sanchez

Technology

Humans versus AI: whether and why we prefer human-created compared to AI-created artwork

B Bellaiche, L., Shahi, R., Turpin, M. H., Ragnhildstveit, A., Sprockett, S., Barr, N., ... & Seli, P. (2023). Cognitive Research: Principles and Implications, 8(1), 1-22. https://doi.org/10.1186/s41235-023-00499-6

"In Hungary, 94% of businesses have Internet access and 63% have a website. Moreover, online retail sales will reach HUF 1,203 billion in 2021. In order for companies to achieve the largest possible market share, they can use various digital marketing strategies. They are distinguished according to different methods. One of the most commonly used in practice and in science is inbound (as search engine optimization) and outbound (as advertising). Google Ads, which emerged at the turn of the millennium and defined itself as the world's first company to use machine learning technology, is a market leader. Their ad system was initially based on keywords, which have since been expanded to include more than 4,800 types of targeting criteria. These targeting options are available for a variety of ad formats. The digital solutions to the billboards of traditional marketing are banner ads, called Display on Google. These ads contain image, video, and text content and aim to interrupt the consumer's activity and redirect them to the advertiser's website. Since they are capable of increasing website traffic by up to 300%, this can be interpreted as an opportunity that is also considered favorable by businesses. It is also suitable for testing various content elements, as one of its main indicators, the click-through rate, expresses the relevance of the ad, as several researchers have noted. As the role of artificial intelligence grows, more and more companies are using it as a competitive advantage. Some of their algorithms are capable of generating text, images, videos, or other content. In this study, I leverage the power of display ads and conduct my research in the Google Ads system instead of conducting consumer surveys. I created two ads for the same target audience, with the same budget and settings. The text content for one ad was created by a marketer, the image content was created by a professional photographer, and the content elements for the other ad were provided by Artificial Intelligence. The objective of the article is to study the performance, efficiency, and impact of artificial intelligence-generated content on conversions under real market conditions. The study also includes content created by the players"

Yvonne Wade Sanchez

Publications of biomedical research: Evolving landscape and constant themes

Zhou, Q. (2023). *American Medical Writers Association Journal*, 38(2), 3-4. [doi: none]

"The field of biomedical research publication has undergone significant changes in the last few years. The COVID-19 pandemic catapulted forward an era of virtual scientific conferences, for which technological tools were quickly developed and established to enable the display of conference presentations and posters on digital platforms. Although conferences have returned to in-person attendance, most still use a hybrid format, enabling virtual participation and on-demand access to digital conference materials. On the front of biomedical publishing by scholarly journals, there is a similar trend toward digital content beyond the traditional 2D format. Many journals have embraced digital enhancements of journal articles to extend their reach to a wider audience. Examples include video or audio abstracts, infographic summaries, plain language summaries, and social media posts, to name a few."

Walter Orr

Usability studies

Talking about thinking aloud: Perspectives from interactive think-aloud practitioners

O'Brien, L., & Wilson, S. (2023). *Journal of User Experience, 18*(3), 113–132. [doi: none]

"It is widely reported in the literature that intervening during usability testing sessions affects user behavior and compromises the validity of the test. However, this contrasts with the ongoing popularity of Interactive Think-Aloud (ITA) amongst practitioners. [The authors] report an in-depth qualitative study that explored this

tension between theory and practice through nine interviews with ITA practitioners." The researchers found that practitioners in the study sometimes use ITA "to slow down users as they navigate through a system, to manage external pressures such as recruitment difficulties, and to reframe a session as a kind of interview or participatory study." Practitioners also reported "unexpected difficulties with ITA, including the risk that it results in overly reflective think-aloud and creates challenges in team working" and may also produce reactivity, which the practitioners attempt to reduce. "However, overall, [the practitioners] did not see the traditional positivist objective of valid problem discovery as a realistic or high-priority goal for usability testing. They believed that ITA data can be useful and valid even if user behavior is not wholly realistic." The authors "argue against the narrow problem-counting approach often employed in the comparative usability evaluation studies that have sometimes seemed to discredit ITA . . . [and] also make the case for broadening how we think about the validity of usability testing data." They conclude "that forms of ITA may be appropriate in some situations."

Lyn Gattis

User experience

UX in e-government services for citizens: A systematic literature review

Aldrees, A., & Gračanin, D. (2023). *Journal of User Experience, 18*(3), 133–169. [doi: none]

"The importance of user experience for the design, development, and deployment of software products has increased significantly, motivating governments to focus on user experience when designing e-government services. [The authors] evaluated the user experience of e-government services from citizens' perspectives by focusing on citizens' characteristics and social aspects, which significantly affect their experience with technology." The authors conducted "a systematic literature review to investigate user experience in e-government by adopting the Social Progress Index (SPI) as a user metric. [They] followed accepted, scholarly guidelines to form research questions and identify specific inclusion/exclusion criteria to meet research objectives." Out of "672 articles, published between 2000–2022 from six technology digital libraries, [they] selected 75 state-of-the-art studies. These studies were categorized based on SPI class. {The authors] synthesized a set of factors that significantly impacts user experience in each class [and then] identified six major user experience concerns in e-government. [They] provide an overall analysis of these concerns, including the calculated frequencies that specific concerns appear in published articles, followed by definitions of the theories and models used to evaluate each behavior. [They] conclude with recommendations for how to enhance user experience in e-government services and mitigate the challenges hindering users from obtaining the best experiences."

Lyn Gattis

Writing

A medical writer's guide: Working on clinical research manuscripts for submission to peer-reviewed medical journals

Nicosia, M. (2023). *American Medical Writers Association Journal*, 38(2), 13-21. [doi: none]

"Prompt publication of clinical trial results in peer-reviewed journals is essential to advance clinical practice and improve patient outcomes. The involvement of professional medical writers (PMWs) in the preparation of these clinical research manuscripts can enhance their quality and shorten publication timelines. Research manuscript projects can be daunting, especially for early-career PMWs who could benefit from insights provided by experienced PMWs. In this guide, first [the author] share[s] [their] perspective on how PMWs contribute to such projects and the essential skills and competencies [they] should provide. Then, [the author] describe[s] [their] tactical approaches to initiating these projects, developing the first draft of a detailed outline or manuscript, and avoiding some common pitfalls that can undermine the quality of a manuscript. Finally, [the author] share[s] some tips for working with challenging personalities."

Walter Orr